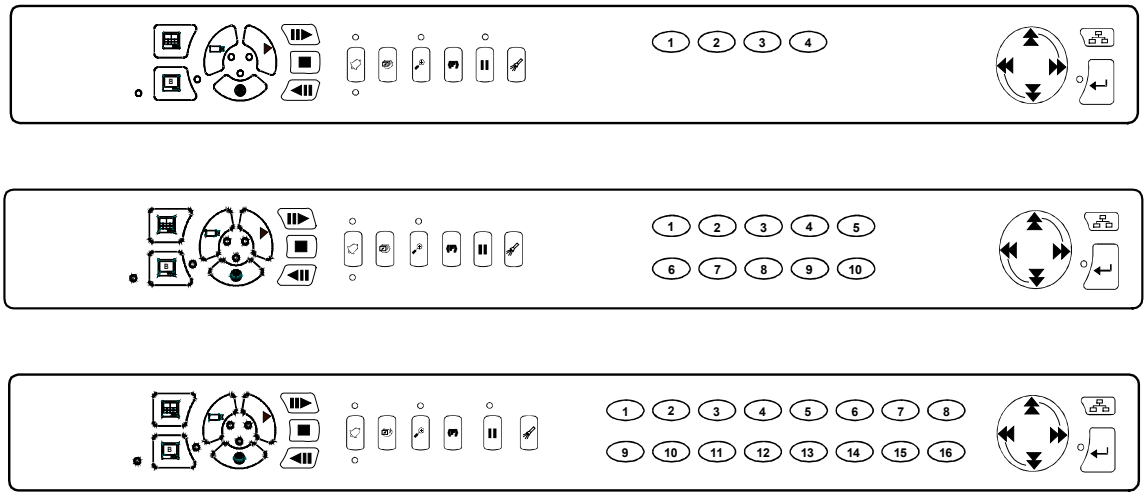
KALATEL

an interlogix company



Calibur DVMRe

Digital Video Multiplexer Recorder

User Manual

WARNING!

To prevent fire and electric shock, do not expose this product to rain or moisture.

The lightning flash with the arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the products enclosure that maybe of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION!

To prevent electric shock, do not remove cover. No user serviceable components inside. Refer servicing to qualified service personnel.

CAUTION! Lithium Battery

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

ATTENTION

This product contains a recyclable lithium battery. It may be illegal to dispose of this battery improperly under local, state, or federal laws. Check with your local waste management officials for disposal and recycling options.

CAUTION!

Electrostatic-Sensitive Device!

Use proper CMOS and MOSFET handing precautions, including approved grounded wrists straps, etc., to avoid damage to this unit or its internal components, from electric discharge.

WARNING!

This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions in this manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to subpart J of part 15 of FCC rules which are designed to provide reasonable protection against such interference when operated in a commercial environment. This equipment has also been tested and found to comply with the requirements for a CE Class A device and TUV safety standards.

Operation of this equipment in a residential area may cause interference, in which case the user is required to take all measures that are necessary, at the user's expense, to correct the interference.

IMPORTANT INFORMATION

Software and/or firmware is furnished to the purchaser under a license for use on a single system. Software and/or firmware included with this equipment are the sole proprietary property of, confidential to, and copyrighted by Kalatel, Corvallis, Oregon, USA. The software/firmware are not to be copied or disclosed in any manner without the express written consent of Kalatel.

All information and specifications furnished by Kalatel are believed to be accurate and reliable. No responsibility is assumed by Kalatel for neither its use nor any infringements of rights of third parties that may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Kalatel.

The **CALIBUR™** brand name and product model numbers are the property of Kalatel.

©COPYRIGHT, 2001: The contents of this manual may not be copied or reproduced in any manner or form without the prior written consent of Kalatel.

Contents

1 FEATURES, CONNECTIONS, AND SETUP 7
1.1 Products Featured In This Manual 7
1.2 Product Description 7
1.3 Passwords 8
1.4 Unpacking 9
1.5 Installation Environment 9
1.6 The Rear Panel 9
1.7 Connections 10
1.8 Alarm I/O Port 12
1.9 Power-Up 14
1.10 Minimum Recommended Menu Setup 15
2 USER OPERATIONS 17
2.1 Principal Operating Modes 17
2.2 Simplex Vs. Duplex 17
2.3 The Front Panel 17
2.4 Recording 17
2.5 Playback 20
2.6 Live Multiscreen Mode 23
2.7 Running A Macro 25
3 DISPLAY OPTIONS 27
3.1 Available Multiscreen Displays 27
3.2 Active Cameos 27
3.3 Sequencing 28
3.4 On-screen Indicators 29
4 ALARMS 31
4.1 Alarm Input 31
4.2 Alarm Output 31
4.3 Silence And Acknowledge 31
4.4 On-screen Displays During Alarms 31
4.5 Alarm Operations During Playback 32
4.6 Alarm History Box 32
4.7 Searching For Recorded Alarms 32
5 SEARCHING AND ARCHIVING 33
5.1 Defining Search Type 33
5.2 Defining Search Criteria 33
5.3 Search Results 35

6 MENU SYSTEM OVERVIEW 37
6.1 Menu Notation In This Manual 37
6.2 Accessing The Menu System 37
6.3 Available Menus 37
6.4 Menus In This Manual 38
6.5 Navigating The Menu System 38
7 THE MAIN MENU 39
7.1 Main Menu Overview 39
7.2 Time/Date 39
7.3 Sequencing 41
7.4 Record 41
7.5 Alarms 45
7.6 Macro 49
7.7 Motion Detection 51
7.8 Camera Setup 53
7.9 Video Archive Setup 56
7.10 Communications 58
7.11 Front Panel Lock 60
7.12 Factory Settings 60
7.13 Passwords 60
8 THE QUICKINSTALL MENU 61
8.1 QuickInstall Menu Overview 61
8.2 Monitor Setup 61
8.3 ADM (Auto Delete Mode) 62
9 THE OPERATOR & SYSTEMVIEW MENUS 63
9.1 The Operator Menu 63
9.2 The SystemView Menu 63
9.3 The View Screens 64
10 TECHNICAL SPECIFICATIONS 67
11 TEXT INSERTION PROTOCOL 69
11.1 Message Structure 69
11.2 Message Type 69
11.3 Event Field 69
12 RS-232 REMOTE PROTOCOL 71
12.1 Remote Front Panel Simulations 71
12.2 Remote Data And CommandsData Structure 72
13 MACRO TABLES 77
13.1 Macro Functions Table 77

13.2 Scheduled Macro Table 78
14 WARRANTY AND SERVICE 79
14.1 Factory Service 79
14.2 Warranty 80

1 Features, Connections, and Setup

1.1 Products Featured In This Manual

DVMRe-4CS: Digital Video Multiplexer Recorder, Four-Channel, Color, Simplex.

DVMRe-4CD: Digital Video Multiplexer Recorder, Four-Channel, Color, Duplex.

DVMRe-10CD: Digital Video Multiplexer Recorder, Ten-Channel, Color, Duplex.

DVMRe-16CS: Digital Video Multiplexer Recorder, Sixteen-Channel, Color, Simplex.

DVMRe-16CD: Digital Video Multiplexer Recorder, Sixteen-Channel, Color, Duplex.

Key To Model Numbers

1. **DVMRe:** Digital Video Multiplexer Recorder, Ethernet capable.
2. **4, 10,** or **16:** Maximum number of camera inputs.
3. **C:** Color
4. **D:** Duplex. **S:** Simplex

DVMRe	16	C	D
1	2	3	4

1.2 Product Description

The DVMRe is a video multiplexer capable of recording multiple cameras simultaneously to an internal hard disk. Digital recording improves playback quality over time-lapse VCRs, and eliminates the hassle of changing tapes. The unit can be programmed to record continuously by overwriting the oldest recorded data. The unit also allows access to stored video and live camera images via an ethernet connection. Programmable search features eliminates time consuming Fast Forwarding or Rewinding of tapes, searching for critical data. Search for images or events by alarm, time, date, camera number and ASCII cash register or ATM text. Dual monitor outputs allow the user to view separate Multiscreen and Full Screen displays simultaneously.

Caution! This units primary purpose is to furnish video multiplexing and recording with a multiscreen display. Although the unit has alarm handling and motion detection functions, they are considered secondary features. **This unit should not be the only alarm device on site.**

Features

- Simple operator menus and easy to use front panel controls.
- Digital recording to internal hard disk.
- Activity and Intrusion Motion Detection.
- Independent monitor control.
- Full Screen and Multiscreen camera sequencing with programmable sequence list and dwell times.
- Video Freeze and Electronic Zoom with digital pan and tilt.
- Covert camera recording (recording without display).
- Alarm Handling with Alarm History Log
- User programmable macros, with a macro scheduling function to run the macro at a predetermined time.

- User programmable submacros for RS-232 external device control.
- Daylight savings time change function.
- Master/Slave time clock control via the RS-485 network.
- Remote programming and control through the RS-232, RS-485 and Ethernet ports.
- Video Archiving via the units SCSI port to DAT, AIT, or CD.
- Playback of recorded video via ethernet or modem.
- Live video viewing via ethernet or modem.
- Downloading video to PC via ethernet or modem.

1.3 Passwords

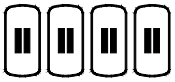
Passwords are provided to limit access to menus and certain functions. Two levels of password security are provided:

- **Operator:** Limited menu access, only Operator and System View menus are available.
- **Installer:** Complete menu access.

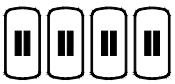
As a security measure, it is recommended that the Operator and Installer passwords be changed after installation is complete (see section 7.13). Store the passwords in the administrators secure files.

Default Passwords

Four-Channel Units

Password Type	Access Level	Function	Changeable by user?	Default Password
Operator	Operator	Provides access to the Operator and SystemView menus.	Yes	
Installer	Installer	Provides access to all on-screen menus.	Yes	**3 4 4 4**
Factory Defaults	Installer	Resets the multiplexer to the factory defaults.	No	**4 1 1 1**
Language	Installer	Provides access to the On-screen Language menu.	No	**1 4 1 4**

Ten and Sixteen-Channel Units

Password Type	Access Level	Function	Changeable by user?	Default Password
Operator	Operator	Provides access to the Operator and SystemView menus.	Yes	
Installer	Installer	Provides access to all on-screen menus.	Yes	**3 4 77**
Factory Defaults	Installer	Resets the multiplexer to the factory defaults.	No	**81 1 1**
Language	Installer	Provides access to the On-screen Language menu.	No	**5 4 1 5**

1.4 Unpacking

Check the package and contents for visible damage. If any components are damaged or missing, do not attempt to use the unit, contact the supplier immediately. If the unit must be returned, it must be shipped in the original packing box.

Package Contents

- The DVMRe unit.
- The Alarm Interface Circuit Board.
- The 12 volt Power Supply with Power Cable.
- The User Manual.
- A WaveReader Software CD.
- The WaveReader Software Manual.
- The Archiving Addendum.

1.5 Installation Environment

Power: Ensure that the sites AC power is stable and within the rated voltage of the 12 Volt DC power supply. If the sites AC power is likely to have spikes or power dips, use power line conditioning or an Uninterruptable Power Supply (UPS).

Ventilation: Ensure that the location planned for the installation of the unit is well ventilated. Take note of the locations of the cooling vents in the units enclosure, and ensure that they are not obstructed.

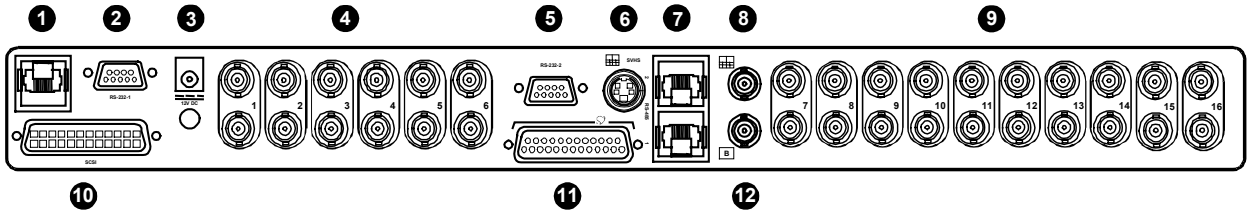
Temperature: Consider the units operating temperature (0 to 40 °C) and non-condensing humidity specifications (10% to 80%) before choosing an installation location. Extremes of heat or cold beyond the specified operating temperature limits may cause the unit to fail. Do not install the unit on top of other hot equipment. Leave space between rack mounted units.

Moisture: Do not expose the unit to rain or moisture. Moisture can damage the internal components. Do not install the unit near sources of water.

Chassis: Other equipment may be placed on top of the unit if it weighs less than 35 pounds (16 kilograms).

1.6 The Rear Panel

For detailed connection information, see section 1.7.



1. **10/100 Ethernet Port:** For connecting to remote PC via ethernet.
2. **RS-232 Port 1:** For modem connection, text insertion, and flashing the PPC.
3. **Power Connector:** Connect 12 volt DC power supply. 2.1mm barrel connector, Center Positive.
4. **Camera Inputs:** BNC connector, looping. Auto Terminating.
5. **RS-232 Port 2:** For external control of the unit, and flashing the main software.
6. **Y/C Monitor-A Output:** Y/C video output with 4-pin miniDIN style connector.

7. **RS-485 Connector:** For connecting several units to a single keyboard, or vice-versa.
8. **Composite Monitor-A Output:** Composite video output with BNC style connector.
9. **Camera Inputs:** BNC style connector, looping. Auto Terminating.
10. **SCSI Port:** For connecting SCSI compatible archive devices.
11. **Alarm I/O:** For connecting alarm inputs, and alarm output relays.
12. **Monitor-B Output:** Composite video output with BNC style connector.

1.7 Connections

This section contains connection specifications for the DVMRe only. For instructions regarding the connection of the associated security equipment in your system, please consult the instruction manual of the associated equipment.

Associated equipment in a typical security system could contain the following items:

- A primary monitor.
- A secondary monitor.
- A Keyboard.
- Video cameras: 1 volt peak-to-peak, with composite video outputs.
- Alarm input devices: Pressure sensors, motion detectors, etc.
- Alarm output devices: Buzzers, Sirens, Flashing Lights, Etc.
- A PC connected via the ethernet.
- An external archive device, such as a SCSI CD, DAT, or AIT drive.

Ethernet Port

The cable connection configuration depends on your network configuration:

- For a DVMRe that connects directly to a Hub, use a Straight Through connection.
- For a DVMRe that connects directly to a PC, use a Cross Over connection.

Consult with you MIS personnel for the specific type of configuration. See section 7.10 for information about configuring the ethernet settings in the menu system.

Wire Type: Cat 5

Connector Type: RJ-45

Max Cable Length: 100 feet / 30.5 meters

Minimum Cable Length: 6 feet / 1.8 meters

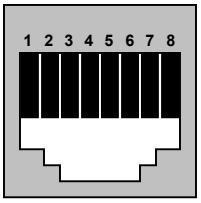
Hub Wiring Configuration: Straight Through

PC Wiring Configuration: Cross Over

RJ-45 Pin Configuration For Ethernet Port

Pin	Use
1	TX+
2	TX-
3	RX+
4	Not Connected

Pin	Use
5	Not Connected
6	RX-
7	Not Connected
8	Not Connected



RJ-45 socket on rear panel.

RS-232 Port 1

For Modem and Flash Software Upgrading, connect a Null Modem cable. See section 7.10 for information about configuring the modem settings in the menu system.

See the documentation of the text translating device for cable pin-out specifications.

Connector Type: DB-9

Gender (on unit): Male

Cable Required (Modem): Modem

Cable Required (Flash): Modem

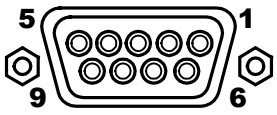
Cable Required (Text Insertion): Unspecified, see pin configuration for text translator.

DB-9 Pin Configuration For Port 1

Pin	Use
1	DCD
2	RX
3	TX

Pin	Use
4	Not Connected
5	Ground
6	Not Connected

Pin	Use
7	RTS
8	CTS
9	Not Connected



DB-9 on rear panel.

Camera Inputs

There are two BNC jacks for each camera. Either jack can receive a camera signal. The signal is looped (directly connected to the other jack), making the camera signal available to other equipment.

The camera input connectors are Auto Terminating. Make sure there is a 75-Ohm termination at the end of the video line if the signal is looped through the DVMRe.

Cable: 75-Ohm Coaxial

Connectors: BNC

Auto Terminating: Yes

Passive Looping: Yes

Time base correction is performed during digital capture. As a result, cameras do not require synchronization.

See section 7.8 for information about disabling unused camera jacks in the menu system.

RS-232 Port 2

Use the pin-out configuration given below to select the proper cable.

Connector Type: DB-9

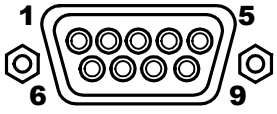
Gender (on unit): Female

DB-9 Pin Configuration For Port 2

Pin	Use
1	Not Connected
2	RX
3	TX

Pin	Use
4	Not Connected
5	Ground
6	Not Connected

Pin	Use
7	Not Connected
8	Not Connected
9	Not Connected



DB-9 on rear panel.

Monitor-A Output

The DVMRe supports two types of Monitor-A outputs (Composite and Y/C). Y/C video output has a 4-pin miniDIN style connector. This style of connection is also referred to as SVHS and S-Video. The Composite video output has a BNC style connector.

Composite Monitor-A Output

When connecting directly from the DVMRe to the monitor, select the 75-Ohm impedance setting on the monitor.

Cable: 75-Ohm Coaxial

Connectors: BNC

If an additional device is connected to the monitor's looping output, set the termination of the additional device as 75-Ohm, and set the termination of the monitor as Hi-Z (High Impedance).

RS-485 Connector

Shields are grounded at one end, preferably at the DVMRe.

See section 7.10 for information about configuring the RS-485 network address settings in the menu system.

Wire Type: Cat 5

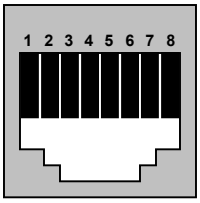
Connector Type: RJ-45

Max Cable Length: 3200 feet / 1000 meters

RJ-45 Pin Configuration For RS-485 Port

Pin	Use
1	Ground (Shield)
2	+12 Volt DC
3	Network +VE
4	Not Connected

Pin	Use
5	Not Connected
6	Network -VE
7	Ground (Shield)
8	+12 Volt DC



RJ-45 socket on rear panel.

SCSI Port

The unit is equipped with a SCSI port for connecting external archive devices. The unit only supports a single SCSI device. The SCSI ID must be set to 0.

The SCSI bus must be terminated, otherwise the system will not operate properly.

Additional menu setup may be necessary to configure archive device. See section 7.9.

Connector: 50 Pin, High Density SCSI-2.

Gender (on unit): Female

Compatible devices: DAT, AIT, CD-R, CD-RW

Autoloader Support?: Yes

SCSI ID: 0

Monitor-B Output

When connecting directly from the DVMRe to the monitor, select the 75-Ohm impedance setting on the monitor.

Cable: 75-Ohm Coaxial

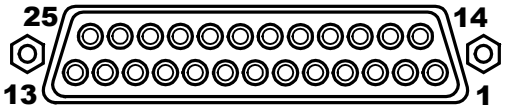
Connectors: BNC

If an additional device is connected to the monitor's looping output, set the termination of the additional device as 75-Ohm, and set the termination of the monitor as Hi-Z (High Impedance).

1.8 Alarm I/O Port

The rear panel of the unit is equipped with an Alarm Port (DB-25 style connector).

Do not attempt to wire directly to the DB-25 connector on the rear panel.

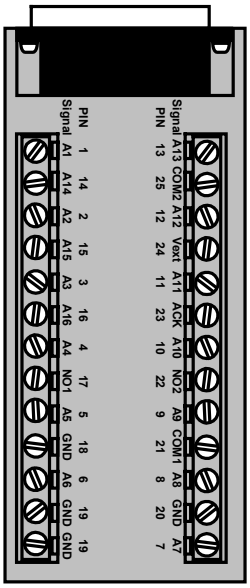


DB-25 Connector on Rear Panel

Connect the Alarm PCB (supplied with the unit) to the Alarm Port. Wire all alarm inputs to the Alarm PCB.

If the Alarm PCB is lost or missing, contact Kalatel Customer Support for a replacement (Part Number 0900-0077B). As a substitute, purchase a female DB-25 connector and make all connections as shown in this section.

Pin 1: Alarm Input 1.
Pin 2: Alarm Input 2.
Pin 3: Alarm Input 3.
Pin 4: Alarm Input 4.
Pin 5: Alarm Input 5.
Pin 6: Alarm Input 6.
Pin 7: Alarm Input 7.
Pin 8: Alarm Input 8.
Pin 9: Alarm Input 9.
Pin 10: Alarm Input 10.
Pin 11: Alarm Input 11.
Pin 12: Alarm Input 12.
Pin 13: Alarm Input 13.
Pin 14: Alarm Input 14.
Pin 15: Alarm Input 15.
Pin 16: Alarm Input 16.
Pin 17: Alarm Output Relay #1.
Pin 18: Ground.
Pin 19: Ground.
Pin 20: Ground.
Pin 21: Alarm Output Relay #1 Common Ground.
Pin 22: Alarm Output Relay #2.
Pin 23: External Alarm Silence and Acknowledge.
Pin 25: Alarm Output Relay #2 Common Ground.



Alarm PCB

Alarm Input

An alarm condition can be activated by devices such as pressure pads, passive infrared detectors, door switches, or other similar devices.

See section 7.5 for information about configuring the contacts as Normally Open or Normally Closed in the menu system.

High: 5V (12V Tolerant)
Low: Ground
Inputs: 1 per channel.

Normally Open Zero Potential Relay Contact: Configure in menu as Normally Open.

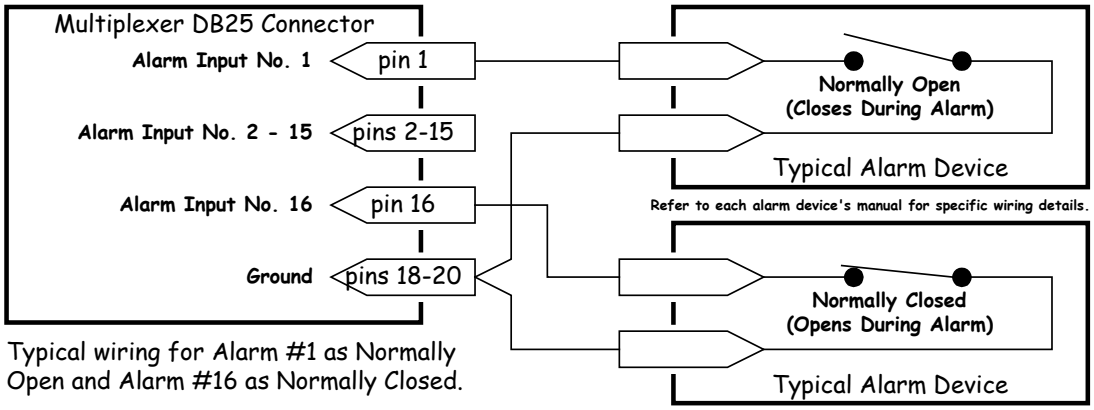
Normally Closed Zero Potential Relay Contact: Configure in menu as Normally Closed

TTL Active High: Configure in menu as Normally Closed.

TTL Active Low: Configure in menu as Normally Open.

Open Collector Active On: Configure in menu as Normally Open.

Open Collector Active Off: Configure in menu as Normally Closed.



Normally Open and Normally Closed Connections

Alarm Relay Output

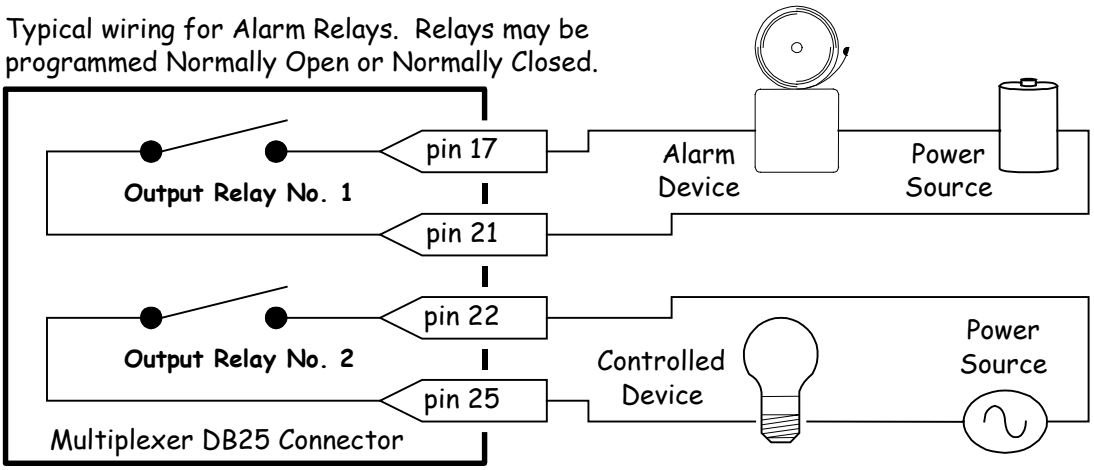
The alarm relay output is activated when an alarm condition exists. The alarm output is only active for the duration of the alarm.

Alarm relays can be programmed in the menu system to respond to macros, and video loss. See section 7.5 for information about configuring the alarms in the menu system.

Output: Zero potential relay contacts, programmable in menu system as Normally Open or Normally Closed.

Voltage: 30V (Max)

Current: 500mA (Max)



External Alarm Silence And Acknowledge

Connect a switch or similar device to Silence and Acknowledge alarms. Connect from pin 23 to either pin 18, 19, or 20 (ground pins).

External Device: Normally Open Zero potential relay contact.

Silencing and Acknowledging an alarm only deactivates the internal buzzer. The alarm output relay will remain active for the duration of the alarm event.

1.9 Power-Up

It is important that the power-up procedures be followed carefully. The unit uses its auto-detect feature to detect camera signals during power-up, and configure itself automatically.

Power Supply

The unit is furnished with a power supply.

Do not use any other power supply with the unit. The manufacturer accepts no responsibility for damage caused by the use of any other power supply.

Power Supply Input
Voltage: 120 to 240 Volt AC
Tolerance: ±10%
Frequency: 50 to 60 Hz
Power Supply Output
Voltage: 12 Volt DC
Power: 35 Watt
Connector: 2.1mm barrel, Center Positive

Power-up procedure

Once the system installation is complete, apply power in the following order:

1. Energize the monitors and all of the cameras.
2. Energize the DVMRe.

Once power is applied to the unit, it will begin its power-up procedure. The unit will begin by displaying the software version on Monitor-A, then the unit will begin recording automatically.

Duplex: Duplex units will display a multiscreen on Monitor-A.

Simplex: Simplex units will display Camera-1 full screen.

Check Video Input Quality

Check the picture quality by selecting each camera for full screen display. If the picture quality is poor, check the following items:

- The BNC connections.
- The loop-through terminations.
- The video levels of incoming signals.
- The possibility of ground loops.

Check Record And Playback Quality

Record for at least three minutes at the highest record rate (30 pps for NTSC, 25 pps for PAL). Then playback the recording, selecting each camera for full screen display. Check the playback picture quality. If there is a problem with the a camera's video quality, or for additional information about proper camera setup, consult the camera's installation instructions.

1.10 Minimum Recommended Menu Setup

After installation is complete, it is strongly recommended that, as a minimum, the items in the QuickInstall menu be configured before the unit is used. All items located in the QuickInstall menu (except Monitor Setup and ADM) are also found in the Main menu. These items are provided in the separate QuickInstall menu as a convenience for the installer.

For information about accessing and configuring the menu system see section 6.

To find detailed information in this manual about configuring each item in the QuickInstall menu, use the following table to locate the primary menu location of each item in the QuickInstall menu.

QuickInstall Menu Item	Primary Menu Location	Section In Manual
Change the time	Main Menu → Time/Date → Set Time	7.2
Change the date	Main Menu → Time/Date → Set Date	7.2
Edit Camera Titles	Main Menu → Camera Setup → Camera Titles	7.8
Camera Disable	Main Menu → Camera Setup → Camera Disable	7.8
Record Quality	Main Menu → Record → Record Quality	7.4
Installer Password	Main Menu → Passwords → Installer Password	7.13
Auto Disable Now	Main Menu → Camera Setup → Camera Disable → Auto Disable Now	7.8
Color Detect Now	Main Menu → Camera Setup → Camera Color → Color Detect Now	7.8
Monitor Setup	QuickInstall → Monitor Setup	8.2
ADM	QuickInstall → ADM	8.3

2 User Operations

2.1 Principal Operating Modes

The DVMRe has four principal modes of operation:

- Recording.
- Playback.
- Live Multiscreen.
- Stop.

Each mode is discussed in detail later in this section.

2.2 Simplex Vs. Duplex

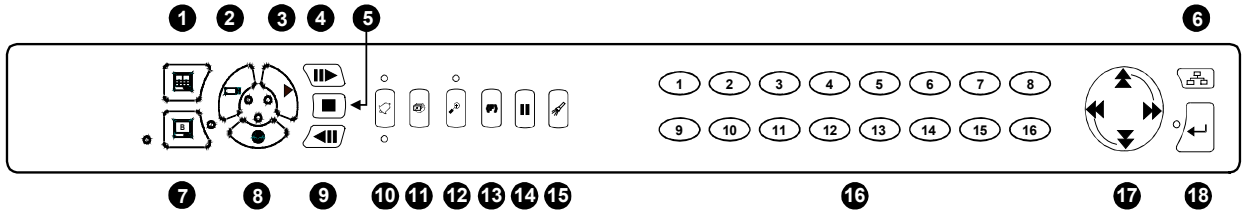
Simplex: The unit is only capable of operating in a single mode. For Example, selecting Live Multiscreen cancels the Recording operations.

Duplex: The unit is capable of performing the following tasks concurrently:

- Viewing Live Multiscreen images while Recording.
- Viewing Live Multiscreen images during Playback.

There are notes throughout this manual describing the difference in operation of specific features between simplex and duplex.

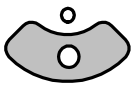
2.3 The Front Panel



1. Multiscreen button.
2. Live button.
3. Play button.
4. Play Forward button.
5. Stop button.
6. Menu button.
7. Monitor-B button.
8. Record button.
9. Reverse Play button.
10. Alarm button.
11. Sequence button.
12. Zoom button.
13. Function button.
14. Freeze button.
15. Search button.
16. Number buttons.
17. Arrow button.
18. Enter button.

2.4 Recording

To begin recording, press the **Record** button. Recording will be indicated by the LED located directly above the **Record** button. Recording is also indicated as **REC** on the primary monitor. The unit always starts recording at the end of previously recorded data.



Record Button with LED

The unit will continue recording until:

- The disk is full.
- The **Play** button or **Stop** button is pressed.

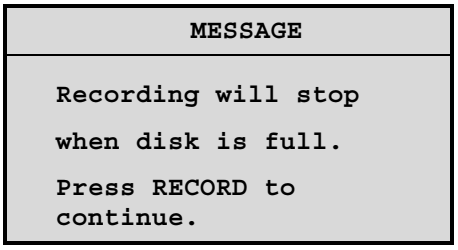
On Simplex units, recording is also stopped when the **Multiscreen** button is pressed.

Disk Nearly Full Notification

When the recorder has less than 10% of its disk space available, the unit will begin toggling between the Multiscreen and Full screen, displaying (on the Full screen display) an on-screen notification indicating that the disk is nearly full.

The operator has the option to let the unit stop recording when the disk is full, or command the unit to continue recording when the disk becomes full, by recording over the oldest recorded information.

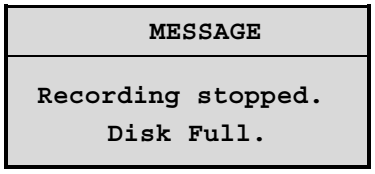
On the Full screen display, this pop-up menu will appear. Pressing the record button now will continue recording and begin overwriting data.



The percentage of space remaining on the hard disk and the amount of time until recording is stopped is indicated on both Full screen and Multiscreen displays.

If the operator allows the disk to become full, this dialog box will appear.

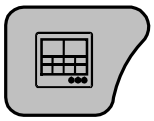
Press the **Enter** button to clear the dialog box and return the unit to Stop mode. The unit will not continue recording again until the operator pushes the **Record** button.



Monitor-A Displays During Recording

Multiscreen Display

During Recording, press the **Multiscreen** button to activate the multiscreen display on Monitor-A. Repeatedly pressing the **Multiscreen** button advances the display to the next multiscreen. For detailed information about Multiscreen displays, see section 3.1.



Multiscreen Button

Multiscreen Display with Sequencing

If a multiscreen display does not include all of the cameras, the remaining cameras can be sequenced in the bottom right cameo. While in a multiscreen display, press the **Sequence** button to begin sequencing. For detailed information about sequencing, see section 3.3.

Sequence Button

Full Screen Display

Select any camera for Full Screen display by pressing the **Number** button of the desired camera.

Number Button

Sequenced Full Screen Display

While in a Full Screen display, press the **Sequence** button to begin full screen sequencing. The sequence list and dwell times are programmable. For detailed information about programming the sequence list see section 3.3. For detailed information about configuring the dwell times in the menu system, see section 7.3.

Sequence Button

Zooming

To activate the 2x digital zoom, select the full screen display of the camera you wish to zoom, then press the **Zoom** button. Zooming will be indicated by the LED located directly above the **Zoom** button. Zooming is also indicated as **ZOOM** on the primary monitor. Zooming works with frozen and non-frozen images. Zoomed images can also be frozen.

While Zoomed, use the **Arrow** buttons to Pan and Tilt across the image. Please note, the camera does not move during digital Pan/Tilt.

Press the **Zoom** button again to cancel the Zoom operations.

Zoom Button with LED

If the **Zoom** button is pressed while in a multiscreen display, the camera from the last active cameo is selected for full screen display. Press the **Zoom** button again to activate the Zoom operation.

Freezing

Pressing the **Freeze** button freezes all camera images on-screen. Full Screen freezing is indicated as **FRZ** on-screen. Multiscreen freezing is indicated as * (a flashing asterisk) in each frozen cameo.

Individual cameos can be frozen in Active Cameo mode (see section 3.2).

Press the **Freeze** button again to cancel Freeze operations.

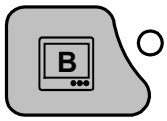
Freeze Button

Monitor-B Displays During Recording

During recording, Monitor-B displays a single camera, live and full screen. These images cannot be zoomed or frozen.

Selecting Monitor-B

To change cameras on Monitor-B, press the **Monitor-B** button. The Monitor-B LED will light to indicate that the number buttons now control Monitor-B. Press the **Monitor-B** button again to return the keypad control to Monitor-A.



Monitor-B Button

Full Screen Display

Select any camera for Full Screen display on Monitor-B by pressing the **Number** button of the desired camera.

Number Button

Sequenced Display

Press the **Sequence** button to begin sequencing. The sequence list and dwell times are programmable. For detailed information about programming the sequence list see section 3.3. For detailed information about configuring the dwell times in the menu system, see section 7.3.

Sequence Button

2.5 Playback

Start Playback

To begin playback, press the **Play** button. A message will appear prompting "Do you want to stop Record?".

To stop recording and continue with playback: Press the **Enter** button. Recording will stop, Playback will start. Playback starts at the beginning of the last recording session. Playback will be indicated by the LED located next to the **Play** button. Playback is also indicated as ▷ on the playback monitor.

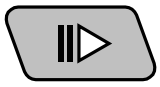
Play Button with LED

To cancel selection and continue recording: Press the **Menu** button or wait a few seconds for the message to disappear.

Playback Operations

Play Forward

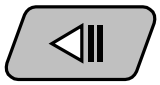
When playback begins, the default is to play forward at the rate the data was recorded. While in Playback mode, the user may change the playback direction, playback speed, etc. To return to Play Forward operations, press the **Play Forward** button. Play Forward is indicated as ▷ on the playback monitor.



Play Forward Button

Reverse Play

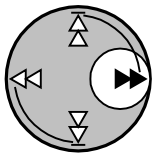
To begin reverse playback, press the **Reverse Play** button. Reverse Play is indicated as ◁ on the playback monitor.



Reverse Play Button

Fast Forward

During playback, press the **Right Arrow** button. The unit will display images at a higher than normal rate. Fast Forward is indicated as ▷▷ on the playback monitor. There are 4 Fast Forward rates. Repeated pressing of the **Right Arrow** button will increase the playback speed.



Right Arrow Button

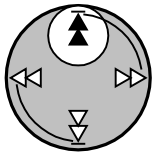
Rewind

During playback, press the **Left Arrow** button. The unit will display images (in reverse) at a higher than normal rate. Rewind is indicated as ◁◁ on the playback monitor. There are 4 Rewind rates. Repeated pressing of the **Left Arrow** button will increase the rewind speed.

Left Arrow Button

Skip Forward

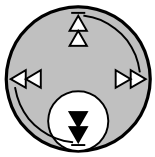
During playback, press the **Up Arrow** button. The unit will skip forward through approximately 120 megs of data on the hard disk. After skipping, the unit will return to the previous playback mode (Play Forward, Reverse Play, Fast Forward, Rewind, etc.). Skip Forward is indicated as ▷▷| on the playback monitor.



Up Arrow Button

Skip Rewind

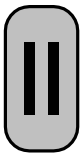
During playback, press the **Down Arrow** button. The unit will skip back through approximately 120 megs of data on the hard disk. After skipping, the unit will return to the previous playback mode (Play Forward, Reverse Play, Fast Forward, Rewind). Skip Rewind is indicated as ⏮ on the playback monitor.



Down Arrow Button

Pause

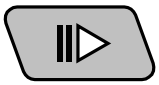
During playback, press the **Freeze** button. The is feature pauses all full screen and multiscreen images. Pause is indicated as ⏸ on the playback monitor.



Freeze Button

Single Frame Advance

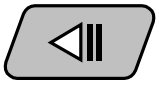
While in Pause mode, press the **Play Forward** button. The unit will advance a single frame, then return to Pause mode. Single Frame Advance is indicated as ⏯ on the playback monitor.



Play Forward Button

Single Frame Rewind

While in Pause mode, press the **Reverse Play** button. The unit will rewind a single frame, then return to Pause mode. Single Frame Rewind is indicated as ⏪ on the playback monitor.

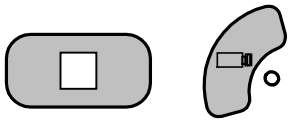


Reverse Play Button

Stop Playback

To stop playback and return to Live Multiscreen mode, press either the **Stop** button or the **Live** button.

Pressing the **Record** button will stop playback, and return the unit to Record mode.



Stop Button or Live Button

Searching Recorded Data

The DVMRe has a search interface feature that allows the user to search for data on the internal hard disk or an external archive device. The user may search the data for previous recording sessions, text insertion, or alarm conditions. Because the search interface is so dynamic, it is covered in detail in a separate section of this manual. See section 5.

Single Monitor Mode Vs. Dual Monitor Mode

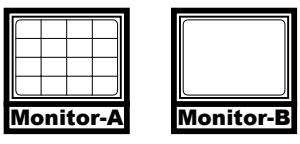
The Monitor mode determines which monitor will display the video playback. This feature is configured in the QuickInstall menu. This feature is only available on Duplex units.

Single Monitor Mode

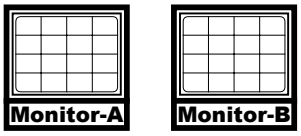
Monitor-A: Full Screen or Multiscreen Video Playback is displayed.

Monitor-B: Live Full Screen images are displayed.

Video playback replaces the live video on Monitor-A.



Dual Monitor Mode



Monitor-A: Live Full Screen or Multiscreen images are displayed.

Monitor-B: Full Screen or Multiscreen Video Playback is displayed.

The primary function of Dual Monitor mode is to provide multiscreen playback on Monitor-B, while continuing to display live multiscreen video on Monitor-A. Dual Monitor mode requires two monitors.

Playback in Dual Monitor mode is the only time a multiscreen will be displayed on Monitor-B.

Playback Monitor Displays

The following information is about the playback monitor. Depending on how the unit is configured, this may be Monitor-A or Monitor-B.

Multiscreen Display

During Playback, press the **Multiscreen** button to activate the multiscreen display. Repeatedly pressing the **Multiscreen** button advances the display to the next multiscreen. For detailed information about Multiscreen displays, see section 3.1.

Multiscreen Button

Multiscreen Display With Sequencing

If a multiscreen display does not include all of the cameras, the remaining cameras can be sequenced in the bottom right cameo. While in a multiscreen display, press the **Sequence** button to begin sequencing. For detailed information about sequencing, see section 3.3.

Sequence Button

Full Screen Display

Select any camera for Full Screen display by pressing the **Number** button of the desired camera.

Number Button

Sequenced Full Screen Display

While in a Full Screen display, press the **Sequence** button to begin full screen sequencing. The sequence list and dwell times are programmable. For detailed information about programming the sequence list see section 3.3. For detailed information about configuring the dwell times in the menu system, see section 7.3.

Sequence Button

Zooming

To activate the 2x digital zoom, select the full screen display of the camera you wish to zoom, then press the **Zoom** button. Zooming will be indicated by the LED located directly above the **Zoom** button. Zooming is also indicated as **ZOOM** on the monitor. Zooming works with frozen and non-frozen images. Zoomed images can also be frozen.

While Zoomed, use the **Arrow** buttons to Pan and Tilt across the image. Please note, the camera does not move during digital Pan/Tilt.

Press the **Zoom** button again to cancel the Zoom operations.

Zoom Button with LED

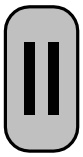
If the **Zoom** button is pressed while in a multiscreen display, the camera from the last active cameo is selected for full screen display. Press the **Zoom** button again to activate the Zoom operation.

Freezing

Pressing the **Freeze** button freezes all camera images on-screen. Full Screen freezing is indicated as **FRZ** on-screen. Multiscreen freezing is indicated as * (a flashing asterisk) in each frozen cameo.

Individual cameos can be frozen in Active Cameo mode (see section 3.2).

Press the **Freeze** button again to cancel Freeze operations.



Freeze Button

Monitor-A Displays During Playback (Dual Monitor mode)

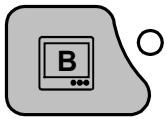
Same as above, except images are live.

Monitor-B Displays During Playback (Single Monitor Mode)

During playback, Monitor-B displays a single camera, live and full screen. These images cannot be zoomed or frozen.

Selecting Monitor-B

To change cameras on Monitor-B, press the **Monitor-B** button. The Monitor-B LED will light to indicate that the number keypad now controls Monitor-B. Press the **Monitor-B** button again to return the keypad control to Monitor-A.



Monitor-B Button

Full Screen Display

Select any camera for Full Screen display on Monitor-B by pressing the **Number** button of the desired camera.

Number Button

Sequenced Display

Press the **Sequence** button to begin sequencing. The sequence list and dwell times are programmable. For detailed information about programming the sequence list see section 3.3. For detailed information about configuring the dwell times, see section 7.3.

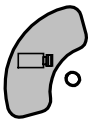
Sequence Button

2.6 Live Multiscreen Mode

To enter Live Multiscreen mode, press the **Live** button. Live Multiscreen mode will be indicated by the LED located next to the **Live** button.

Simplex Units: Entering the Live Multiscreen mode stops all playback and recording.

Duplex Units: Entering the Live Multiscreen mode stops playback. The unit will continue recording while the live multiscreen video is displayed.

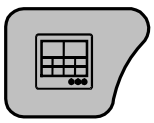


Live Button

Monitor-A Displays In Live Multiscreen Mode

Multiscreen Display

In Live Multiscreen mode, press the **Multiscreen** button to activate the multiscreen display on Monitor-A. Repeatedly pressing the **Multiscreen** button advances the display to the next multiscreen. For detailed information about Multiscreen displays, see section 3.1.



Multiscreen Button

Multiscreen Display With Sequencing

If a multiscreen display does not include all of the cameras, the remaining cameras can be sequenced in the bottom right cameo. While in a multiscreen display, press the **Sequence** button to begin sequencing. For detailed information about sequencing, see section 3.3.

Sequence Button

Full Screen Display

Select any camera for Full Screen display by pressing the **Number** button of the desired camera.

Number Button

Sequenced Full Screen Display

While in a Full Screen display, press the **Sequence** button to begin full screen sequencing. The sequence list and dwell times are programmable. For detailed information about programming the sequence list see section 3.3. For detailed information about configuring the dwell times in the menu system, see section 7.3.

Sequence Button

Zooming

To activate the 2x digital zoom, select the full screen display of the camera you wish to zoom, then press the **Zoom** button. Zooming will be indicated by the LED located directly above the **Zoom** button. Zooming is also indicated as **ZOOM** on the primary monitor. Zooming works with frozen and non-frozen images. Zoomed images can also be frozen.

While Zoomed, use the **Arrow** buttons to Pan and Tilt across the image. Please note, the camera does not move during digital Pan/Tilt.

Press the **Zoom** button again to cancel the Zoom operations.

Zoom Button with LED

If the **Zoom** button is pressed while in a multiscreen display, the camera from the last active cameo is selected for full screen display. Press the **Zoom** button again to activate the Zoom operation.

Freezing

Pressing the **Freeze** button freezes all camera images on-screen. Full Screen freezing is indicated as **FRZ** on-screen. Multiscreen freezing is indicated as * (a flashing asterisk) in each frozen cameo.

Individual cameos can be frozen in Active Cameo mode (see section 3.2).

Press the **Freeze** button again to cancel Freeze operations.

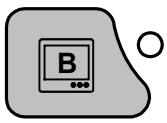
Freeze Button

Monitor-B Displays In Live Multiscreen Mode

In Live Multiscreen mode, Monitor-B displays a single camera, live and full screen. These images cannot be zoomed or frozen.

Selecting Monitor-B

To change cameras on Monitor-B, press the **Monitor-B** button. The Monitor-B LED will light to indicate that the number keypad now controls Monitor-B. Press the **Monitor-B** button again to return the keypad control to Monitor-A.



Monitor-B Button

Full Screen Display

Select any camera for Full Screen display on Monitor-B by pressing the **Number** button of the desired camera.

Number Button

Sequenced Display

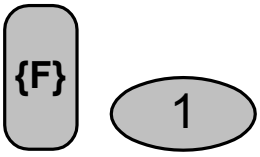
Press the **Sequence** button to begin sequencing. The sequence list and dwell times are programmable. For detailed information about programming the sequence list see section 3.3. For detailed information about configuring the dwell times in the menu system, see section 7.3.

Sequence Button

2.7 Running A Macro

A macro is a recorded sequence of up to 32 keystrokes. To activate a macro, press the **Function** button followed by the **Number** button of the desired macro. While running, the macro is indicated on-screen as the letter **F** and the macro number.

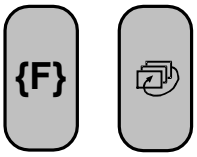
The user can cancel the macro at any time by pressing the **Function** button.



Function and Number Buttons

Daylight Savings Time

To adjust the time one hour for daylight savings time, press the **Function** button, then the **Sequence** button. If this function is activated during April, one hour is added to the time. If the this function is activated in October, one hour is subtracted from the time. This function will only operate once per time period.

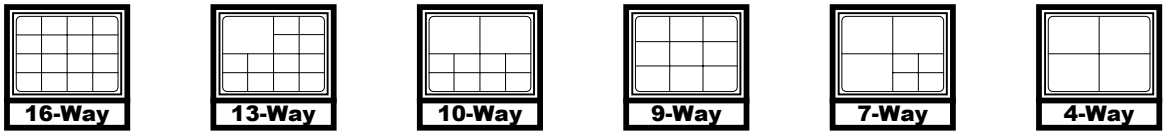


Function and Sequence Buttons

3 Display Options

3.1 Available Multiscreen Displays

Press the **Multiscreen** button to activate the multiscreen display. Repeatedly pressing the Multiscreen button advances the display to the next multiscreen, show in order below.



The multiscreen display is limited to the number of camera inputs on the unit.

Sixteen-Channel unit: Capable of displaying all multiscreens.

Ten-Channel unit: Only capable of displaying 10-way through 4-way multiscreen.

Four-Channel unit: Only capable of displaying 4-way multiscreen.

Multiscreen Format Memory

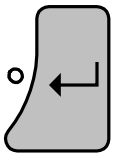
When returning to a multiscreen display from a full screen display, the unit returns to the last multiscreen display shown.

3.2 Active Cameos

A cameo is defined as any cell within a multiscreen display. Active Cameo mode allows the user to access and edit each cameo individually.

Entering Active Cameo Mode

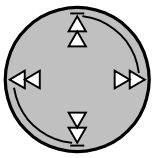
While viewing a multiscreen, enter Active Cameo mode by pressing the **Enter** button. Active Cameo mode is indicated on-screen by flashing the number and titles of the active cameo. By default, the top left cameo is activated.



Enter Button

Selecting Cameos

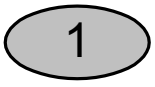
Select a cameo using the **Arrow** buttons to navigate the multiscreen. The Active Cameo will always be indicated by the flashing camera number and titles.



Arrow Buttons

Selecting Cameras

Display any camera in the active cameo by pressing the **Number** button of the desired camera. Once a camera has been selected, the active cameo advances to the next cameo on the right.



Number Button

The camera selection only changes the multiscreen currently being displayed. Each multiscreen must be configured separately. Changes to the multiscreen display are saved in volatile memory, and will not be retained if power is removed from the unit.

Freezing

Press the **Freeze** button to freeze the image in the selected cameo. Each frozen cameo is indicated as * (a flashing asterisk) on-screen.

Press the **Freeze** button again to cancel Freeze operations.

Freeze Button

3.3 Sequencing

The sequencing feature allows a camera to be displayed briefly on-screen, before advancing to the next camera in the sequence list. The default sequence list displays each camera in numerical order.

Dwell Time

The dwell time is the amount of time each camera is displayed on-screen before advancing to the next camera. The Full Screen and Multiscreen Dwell Times are separately programmable in the menu system. For detailed information about configuring the dwell times in the menu system, see section 7.3.

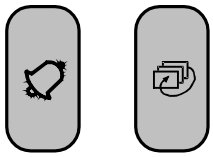
Autolist™ Custom Sequence List

The Autolist™ feature allows the user to create a custom sequence list, controlling the order the cameras are displayed and the dwell time. Using the **Monitor-B** button, select the monitor to be programmed. Then, using a **Number** button, select any camera for full screen display.

The unit must be in Full Screen Display mode before starting to create the sequence list. This initial camera is not part the sequence list.

To begin recording the Autolist™ sequence: Press the **Alarm** button and **Sequence** button simultaneously. Autolist Program mode is indicated as **PGM** on-screen.

Recording starts when the first camera number is pressed. Press the camera numbers in the order you wish them to appear on-screen. The amount of time between button presses determines the Dwell Time. During sequence list recording, pressing any button other than a **Number** button or the **Sequence** button voids the sequence list.



Alarm Button and Sequence Button

To end the recording: Press the **Sequence** button. The amount of time between pressing the last **Number** button and the **Sequence** button determines the dwell time for the final camera in the sequence list.

Returning To The Default Sequence List

The default sequence list is all cameras in numeric order with a three second dwell time.

To return the unit to the default sequence list, go to the Main Menu → Sequencing → Full Screen Dwell menu. Select 03 seconds using the **Up/Down Arrow** buttons, then press the **Enter** button.

Note: Any alteration of the dwell time from this menu will cancel the sequence list and return to the default (numeric) order.

Sequencing In Cameos

While viewing a multiscreen display, additional cameras (cameras not shown in the multiscreen display) can be sequenced in the lower right hand cameo by pressing the **Sequence** button. The sequence list is not programmable, but the dwell time can be adjusted in the menu system. Press the **Sequence** button again to cancel sequencing.

3.4 On-screen Indicators

Monitor-A

There are three groups of on-screen indicators on Monitor-A.

Camera Titles: Displays the camera number and the camera title.

Status Indicators: Displays Time, Date, Mode, Hard Disk Status.

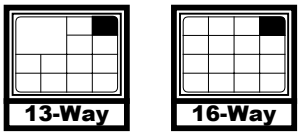
Conditional Indicators: Displays indicators for Freeze, Zoom, Alarm, Motion Detection, Videoloss, Autolist™ Program mode, Macro Record mode.

Camera Titles

Camera Titles are displayed on either the upper or lower corner of the left hand side of the screen. The camera title can be changed in the menu system (see section 7.8). Display position and color can be changed by the user. See below.

Status Indicators

Typically, status indicators are displayed on the upper right hand corner of the screen. On the 16-way and 13-way multiscreens, the Mode and Hard Disk Status are displayed near the upper left hand corner of the screen so that it does not obscure the small cameo in the corner of the screen.



Small Cameo

Status indicators include:

- Time and Date (these can be turned off in the menu system, see section 7.2). The Time and Date format can also be changed in the menu system.
- Mode (Record or Playback).
- Disk Status (Percent of hard disk available and hours of recording until disk becomes full).
- Archive Status (Toggles with Disk Status when archive device is almost full. Displays percent of archive space available and hours of recording until archive device becomes full).

Changing Position And Color Of Title And Status Indicators

Camera Titles: To change the color and position of the camera titles, select a camera for full screen display, then press the **Enter** button to advance to the next display setting. Repeatedly pressing the **Enter** button advances the display settings through the sequence show in the table on the right.

Status Indicators & Camera Titles: Select **Camera 1** for full screen display. Using the **Enter** button, cycle through the sequence show on the right. Each time the cycle is completed, the unit advances the Status Indicator color. Choose either Black, White or Gray.

Position	Color
Top Left	Black
Top Left	White
Top Left	Gray
Bottom Left	Black
Bottom Left	White
Bottom Left	Gray
Title not displayed	

Conditional Indicators

Condition	Full Screen Indicator	Multiscreen Indicator	Monitor
Alarm	**ALM**	**A** in cameo of camera in alarm	Both
Autolist™ Program mode	**PGM**	**PGM**	A
Freeze	**FRZ**	***** (Asterisk) in frozen cameo	A
Macro Record mode	**F** followed by macro number	**F** followed by macro number	A
Motion Detection	**M**	**M** in cameo w/ motion detection	Both
Videoloss	**VDL**	**V** in cameo with videoloss	Both
Zoom	**ZOOM**	**ZOOM**	A

Monitor-B

Monitor-B displays the Time, Date, Camera Number and Camera Title. These displays can be turned off in the menu system (see section 7.2 for Time and Date, section 7.8 for Camera Titles Display).

4 Alarms

4.1 Alarm Input

Alarm devices are connected via the Alarm PCB on the rear panel of the unit (see section 1.8). Each Alarm Input corresponds with the Camera Input of the same number.

4.2 Alarm Output

Front Panel Alarm LED: The LED located directly above the Alarm button is lit for the duration of the alarm.

Internal Buzzer: The internal buzzer is activated until it is Silenced and Acknowledged. This feature can be turned off in the menu system (see Buzzer Setup in section 7.5).

Monitor Displays: Discussed below in the **On-screen Displays During Alarms** section.

Output Relays: The alarm output relays are active for the duration of the alarm. This feature is configured in the menu system (see Alarm Action and Relay Configuration in section 7.5) and can be deactivated.

Macro Activation: Unit can be configured in the menu system to activate a macro when an alarm is detected.

Record Rate: Record Rate can be increased by recording at the Alarm Record Rate (see section 7.4) and by Interleaved or Exclusive Recording (see Alarm Record mode in section 7.5).

4.3 Silence And Acknowledge

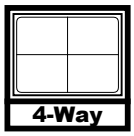
Pressing the **Alarm** button acknowledges to the unit that the alarm has been recognized and silences the internal buzzer. This does not clear the alarm condition.

4.4 On-screen Displays During Alarms

10 and 16-Channel Units (Live or Recording)

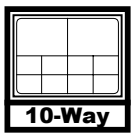
Monitor-A Duplex / Monitor-A Simplex in Live Multiscreen Mode

Single Alarm: When a single alarm is received, the unit changes to 4-way display containing the camera in alarm, and three associated cameras. The three associated cameras are defined as a group in the menu system (see Alarm Action in section 7.5). The top left cameo displays the camera in alarm.



Single Alarm

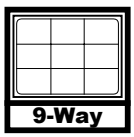
Second Alarm: When a second alarm is received, the unit changes to a 10-way multiscreen, displaying the alarm cameras in the top two cameos. The associated cameras are displayed in the remaining cameos.



Second Alarm

Third Alarm: When a third alarm is received, the unit changes to a 9-way multiscreen, displaying the alarm cameras in the top three cameos. The associated cameras are displayed in the remaining cameos.

More than three alarms simultaneously: The unit switches to a sequenced full screen display of all cameras in alarm.



Third Alarm

Other display options include:

- A full screen display of a single camera in alarm, with a sequenced full screen display for additional cameras in alarm. This option is selectable in the menu system (see Full Screen Alarm in section 7.5).
- Freeze camera display at the time the alarm was received.

Monitor-A Simplex in Record Mode

Single Alarm: Unit switches to a full screen display of the camera in alarm.

Additional Alarms: Unit switches to a sequenced display of all cameras in alarm.

Monitor-B Display During Alarm

Single Alarm: Unit switches to a full screen display of the camera in alarm.

Additional Alarms: Unit switches to a sequenced display of all cameras in alarm.

4-Channel Units (Live or Recording)

Single Alarm: Unit switches to a full screen display of the camera in alarm.

Additional Alarms: Unit switches to a sequenced display of all cameras in alarm.

4.5 Alarm Operations During Playback

Live Alarms Displays

Single Alarm: Unit switches to a full screen display of the camera in alarm.

Additional Alarms: Unit switches to a sequenced display of all cameras in alarm.

Duplex Units in Dual Monitor Mode: Live alarms are displayed on Monitor-A, and operate the same as Monitor-A Duplex (above).

Recorded Alarms

Internal Buzzer: During playback, the internal buzzer is activated until it is Silenced and Acknowledged. This feature can be turned off in the menu system (see Buzzer Setup in section 7.5).

Front Panel Alarm LED: The LED located directly above the **Alarm** button is lit for the duration of the alarm.

Monitor-A Multiscreen: Each camera in alarm is indicated on-screen by a flashing **A** in its cameo. Alarm LED lights to indicate an alarm condition.

Monitor-A Full Screen: The alarm condition is indicated as **ALM** on-screen.

4.6 Alarm History Box

The Alarm History feature provides a list of the 100 most recent alarms. View the Alarm History Box by accessing the menu system, and selecting **Operator → Alarm History**. The Alarm History Box can also be found under **Main Menu → Alarm → Alarm History**. For detailed information about viewing the Alarm History Box see Alarm History in section 7.5.

4.7 Searching For Recorded Alarms

Use the Search Filters Menu to create a list of recorded alarms by searching the previously recorded video data for alarms, then select from the list to view the recorded video. Because the search interface is so dynamic, it is covered in detail in a separate section of this manual. See section 5, Searching and Archiving.

5 Searching and Archiving

The unit provides a search feature to access video files stored on the hard disk or an external archive device.

5.1 Defining Search Type

Before searching, the user must define how the results of the search will be used.

Search hard disk for video to review: From **Main Menu → Video Archive Setup → Archive Mode**, select either **Archiving Off** or **Background Archive** (depending on archive requirements). The heading of the search window will read **Search Filters**.

Search hard disk for video to archive: From **Main Menu → Video Archive Setup → Archive Mode**, select **Selective Archive**. The heading of the search window will read **Archive Search Filters**.

Search archive device for video to restore: From **Main Menu → Video Archive Setup → Archive Mode**, select **Restore From Archive**. The heading of the search window will read **Restore Search Filters**.

Information about setting up archiving in the menu system is covered in section 7.9 of this manual. For detailed information about archiving, see the Archiving Addendum included with this product.

5.2 Defining Search Criteria

Begin by pressing the **Search** button. The Search Filters window will appear. The unit must stop recording to enter the Search Filters window. If recording, the user will be prompted to continue.

Search Button

Use the Search Filters menu to specify:

- The Start and Stop date of the search.
- The Start and Stop time of the search.
- Which cameras to search exclusively.
- Searching for recorded alarms.
- Searching for a text string.

```
                Search Filters
Start                       Stop
DATE : 12/25/00    [ ]      03/05/01    [ ]
(MM/DD/YY)                  (MM/DD/YY)

Start                       Stop
TIME : 11:11:21    [ ]      12:34:34    [ ]

          1   2   3   4   5   6   7   8
Camera: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
Alarm : [ ]

TEXT : *                                [ ]

      [CANCEL]   [OK]   [START SEARCH]
```

Search Filters Menu

Searching For All Recorded Information

Using the **Play Forward** or **Play Reverse** buttons to navigate, select **[Start Search]**, then press the **Enter** button. The Search Results window will appear. For information about selecting from the Search Results window, see **Search Results** later in this section.

Specifying Search Parameters

Selecting A Start And Stop Date

1. Using the **Play Forward** or **Play Reverse** button to navigate, highlight the **Date** parameter.
2. Once in the Date Parameter Box, use the **Left/Right Arrow** buttons to navigate and the **Up/Down Arrow** buttons to change the values.
3. To activate the start or stop date parameter, use the **Up/Down Arrow** buttons to place an **[X]** in the check box.
4. When finished, use the **Play Forward** or **Play Reverse** button to navigate to another parameter.

Selecting A Start And Stop Time

1. Using the **Play Forward** or **Play Reverse** button to navigate, highlight the **Time** parameter.
2. Once in the Time Parameter Box, use the **Left/Right Arrow** buttons to navigate and the **Up/Down Arrow** buttons to change the values.
3. To activate the start or stop time parameter, use the **Up/Down Arrow** buttons to place an **[X]** in the check box.
4. When finished, use the **Play Forward** or **Play Reverse** button to navigate to another parameter.

Selecting Cameras To Search Exclusively

By activating this feature, the unit will only search for those cameras that are selected.

1. Using the **Play Forward** or **Play Reverse** button to navigate, highlight the **Camera** parameter.
2. Once in the Camera Parameter Box, use the **Left/Right Arrow** buttons to navigate among the cameras in the list. To view the list for camera numbers 9 through 16, press the **Right Arrow** button until the highlighted camera goes past number 8. Camera numbers 9 through 16 will replace 1 through 8 in the list.
3. Use the **Up/Down Arrow** buttons to select a camera (or cameras) by placing an **[X]** in the check box.
4. When finished, use the **Play Forward** or **Play Reverse** button to navigate to another parameter.

Searching For Recorded Alarms

By activating this feature, the unit will only search for recorded alarms.

1. Using the **Play Forward** or **Play Reverse** button to navigate, highlight the **Camera** parameter.
2. Once in the Camera Parameter Box, use the **Left Arrow** button to highlight the Alarm parameter.
3. Use the **Up/Down Arrow** buttons to activate the alarm search by placing an **[X]** in the check box.
4. When finished, use the **Play Forward** or **Play Reverse** button to navigate to another parameter.

Searching For Text

Use this feature to search for text generated by ATMs, Point of Sale Systems, Card Access Systems, etc.

1. Using the **Play Forward** or **Play Reverse** button to navigate, highlight the **Text** parameter.
2. Once in the Text Parameter Box, press the **Enter** button to display the default character set.
3. Use the **Function** button to browse forward through the available characters sets. Use the **Sequence** button to browse backwards through the available characters sets.
4. Use the **Up/Down Arrow** buttons to navigate in the desired character in the set.

5. Use the **Left/Right Arrow** buttons to select the desired character and move to the next (or previous) character in the text string. Pressing the **Number 2** button will also select the desired character and move to the next character in the text string. Pressing the **Number 1** button will insert a space.
6. When finished editing the text string, press the **Enter** button.
7. Use the **Left/Right Arrow** buttons to navigate. Use the **Up/Down Arrow** buttons to activate the text search by placing an **[X]** in the check box.
8. When finished, use the **Play Forward** or **Play Reverse** button to navigate to another parameter.

5.3 Search Results

Activate Search

From the Search Filters menu, use the **Play Forward** or **Play Reverse** button to navigate to the **Start Search** parameter. With the **Start Search** parameter highlighted, press the **Enter** button to begin the search operation. When finished searching, the Search Results window will appear.

A maximum of 200 results can be displayed per search.

Follow the directions on-screen to select, archive, playback, etc.

Some options may be unavailable depending on the type of search performed. These option are shown “grayed out”.

When archiving, the unit will not allow the amount of selected data to exceed the amount of space available on the target medium.

```
                Archive Search Results
Start Date    Start Time    Size (MB)     Archive
03/02/01      16:59:15      11460          [X]
03/05/01      16:02:06      798            [X]
03/06/01      11:16:34      54             [X]


                                  Selected [      ](MB)
                Available on Target Medium [      ](MB)
Message
3 matches found
'ENTER' to play event; 'PLAY REV/FWD' to page up/down
'LEFT/RIGHT' to select/deselect Archive
'PAUSE' to select/deselect all items in this page
'RECORD' to start archive
```

Search Results Window

Press the **Menu** button to exit the Search Results window without making a selection.

6 Menu System Overview

6.1 Menu Notation In This Manual

In the following sections, there are headings like this:

❑ Main Menu → Time/Date → Set Time

Meaning: From the Main Menu, select Time/Date, then press the **Enter** button. The Time/Date menu will appear. From the Time/Date menu, select Set Time, then press the **Enter** button. A pop-up or pull-down menu will appear.

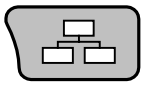
Selected Items

Items selected in the menu system are represented in the manual as follows:

Selected	Not Selected
Time/Date	Time/Date

6.2 Accessing The Menu System

Enter the menu system by pressing the **Menu** button. A Password Box will appear on the primary monitor. Enter either the:



Menu Button

- **Operator Password:** Providing limited access to the menu system. Only the Operator and System View menus are available.
- **Installer Password:** Providing complete menu access.

Use the **Number** buttons or the **Freeze** button to enter the appropriate password.

Passwords are provided in the beginning of this manual, in section **1.3 Passwords**.

6.3 Available Menus

Main	QuickInstall	Operator	SystemView
Time/Date Sequencing Record	Change the time Change the date Edit Camera Titles Camera Disable	Sequencing Time/Date Display Titles Display Alarm History Operator Password	About MUX
Alarms Macro Motion Detection	Record Quality Installer Password Auto Disable Now Color Detect Now	Exit	View Screen 1 View Screen 2 View Screen 3 View Screen 4 View Screen 5 View Screen 6 View Screen 7
Camera Setup Video Archive Setup	Monitor Setup	← Duplex Models Only	Exit
Communications Front Panel Lock Factory Settings Passwords	ADM Exit		
Exit			

6.4 Menus In This Manual

Each menu is covered in detail in its own chapter of this manual. Menus and Menu Items appear in the manual in the same order they appear on-screen.

- **Section 7 Main Menu**
- **Section 8 QuickInstall Menu**
- **Section 9 Operator and SystemView Menus**

6.5 Navigating The Menu System

Selecting a Menu from the Menu Bar: When the menu system is first accessed, only the menu bar is displayed. Use the **Left/Right Arrow** buttons to select the desired menu.

Opening Menus: Press the **Down Arrow** button or the **Enter** button to open the menus.

Exiting Menus: Press the **Menu** button to exit a menu. From the menu bar, press the **Menu** button to exit the menu system completely.

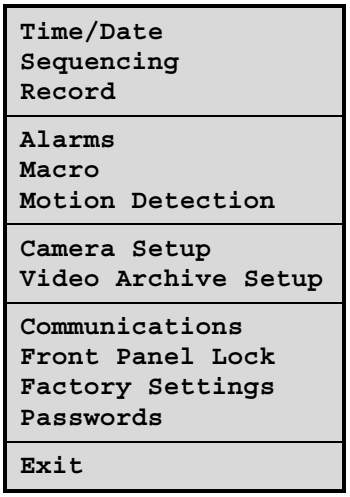
Navigating in Menus: Use the **Up/Down Arrow** buttons to navigate within a menu.

7 The Main Menu

7.1 Main Menu Overview

The Main menu contains the majority of programmable options for the DVMRe. Each item in the Main menu is described in detail in this section of the manual.

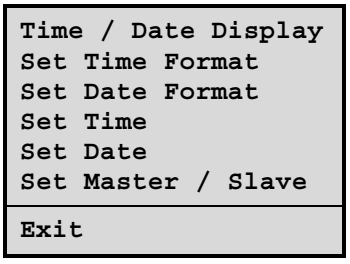
Main menu items are appear in this section in the same order they appear in the menu.



7.2 Time/Date

Use this menu to specify:

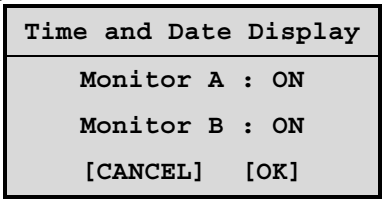
- Which monitors will display the time and date.
- The time format: 12 or 24 hours.
- The date format: MM/DD/YY, YY/MM/DD, or DD/MM/YY.
- The time and date.
- Whether the units clock is a master or slave.



❑ Main Menu → Time/Date → Time / Date Display

Use this menu to specify if the time and date will be displayed on:

- Monitor-A.
- Monitor-B.
- Both Monitors.
- Not Displayed

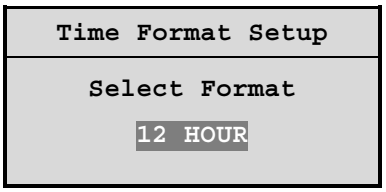


Use the **Up/Down Arrow** buttons to navigate, then use the **Left/Right Arrow** buttons to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu → Time/Date → Set Time Format



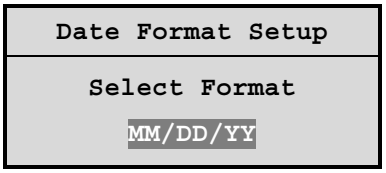
Use the **Arrow** buttons to set the desired time format. Select from either:

- 12 Hour
- 24 Hour

Press the **Enter** button to confirm the selection and exit the menu.

Press the **Menu** button to exit the menu without making changes.

❑ Main Menu → Time/Date → Set Date Format



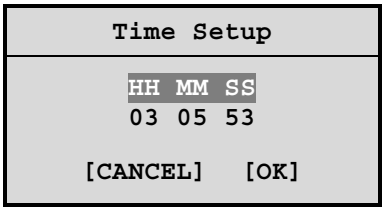
Use the **Arrow** buttons to set the desired date format. Select from either:

- MM/DD/YY
- DD/MM/YY
- YY/MM/DD

Press the **Enter** button to confirm the selection and exit the menu.

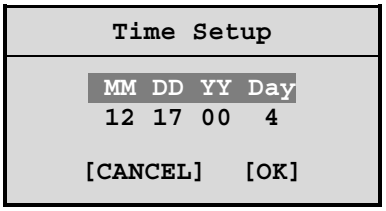
Press the **Menu** button to exit the menu without making changes.

❑ Main Menu → Time/Date → Set Time



1. Using the **Up/Down Arrow** buttons to navigate, highlight **HH MM SS**.
2. Press the **Enter** button, the highlighting will move to the row of numbers.
3. Enter the time in Hours, Minutes, and Seconds. Use the **Up/Down Arrow** buttons to change the values and the **Left/Right Arrow** buttons to navigate.
4. Press the **Enter** button to confirm the selection and exit the edit mode.
5. **To save the changes and exit the menu:** Use the **Up/Down Arrow** buttons to select **[OK]**, then press the **Enter** button.
6. **To exit the menu without making changes:** Use the **Up/Down Arrow** buttons to select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu → Time/Date → Set Date



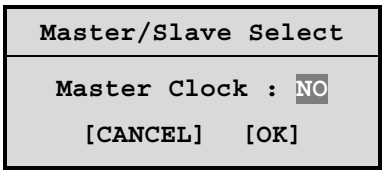
1. Using the **Up/Down Arrow** buttons to navigate, highlight **MM DD YY Day**.
2. Press the **Enter** button, the highlighting will move to the row of numbers.
3. Enter the date in Months, Days, Years, and Day of the Week. Use the **Up/Down Arrow** buttons to change the values and the **Left/Right Arrow** buttons to navigate.

Day of the Week: Day 1 of the week varies with location and local custom. For Example, if Day 1 of the week is Sunday, and today is Wednesday, enter 4 as the day. This feature ensures that Timed Macros will run on the correct day.

4. Press the **Enter** button to confirm the selection and exit the edit mode.

5. **To save the changes and exit the menu:** Use the **Up/Down Arrow** buttons to select **[OK]**, then press the **Enter** button.
6. **To exit the menu without making changes:** Use the **Up/Down Arrow** buttons to select **[CANCEL]**, then press the **Enter** button.

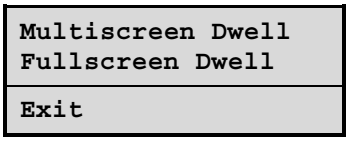
❑ Main Menu → Time/Date → Set Master / Slave



If several multiplexers are installed and connected via RS-485 a network, one of the multiplexers may be set as the master clock. This unit will control the date and time (including daylight savings time) for all of the other units.

Select **One** unit from the RS-485 network as the master clock by selecting **YES** in this menu. **All other units must be set as NO**.

7.3 Sequencing

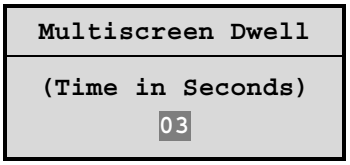


Use this menu to specify:

- The multiscreen dwell time.
- The full screen dwell time.

The dwell time is the amount of time each camera is displayed on-screen (while sequencing) before advancing to the next camera.

❑ Main Menu → Sequencing → Multiscreen Dwell

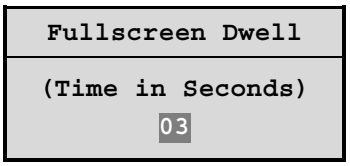


Use the **Arrow** buttons to select the desired dwell time (from 1 to 30 seconds). The default is 3 seconds.

Press the **Enter** button to confirm the selection and exit the menu.

Press the **Menu** button to exit the menu without making changes.

❑ Main Menu → Sequencing → Fullscreen Dwell

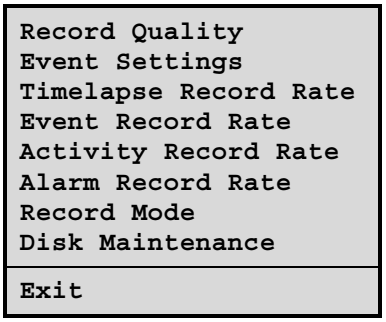


Use the **Arrow** buttons to select the desired dwell time (from 1 to 30 seconds). The default is 3 seconds.

Press the **Enter** button to confirm the selection and exit the menu.

Press the **Menu** button to exit the menu without making changes.

7.4 Record

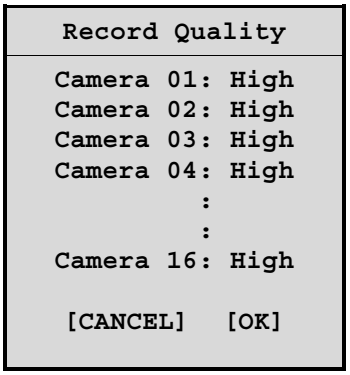


Use this menu to:

- Specify the record quality: High, Medium, or Low.
- Specify if a camera is to be used for event recording, time-lapse recording, or both.
- Specify the time-lapse record rate per camera.
- Specify the event record rate per camera.
- Specify the activity record rate per camera.
- Specify the alarm record rate per camera.
- Specify whether previously recorded video is to overwritten automatically, or only with the users approval (when the hard disk becomes full).
- Perform disk maintenance by Deleting, Un-deleting, or Destroying previously recorded video.

❑ Main Menu → Record → Record Quality

Use this menu to specify the record quality for each camera. Decreasing the record quality decreases the amount of disk space required to store the images, due to a higher compression scheme.



Record Quality	Picture Quality	Disk Space Needed
High	Excellent	Greatest
Medium	Good	Medium
Low	Fair	Least

Use the **Up/Down Arrow** buttons to navigate, and the **Left/Right Arrow** buttons to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

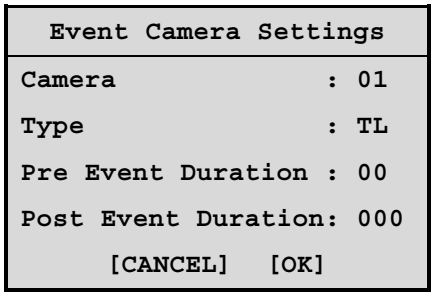
❑ Main Menu → Record → Event Settings

Use this menu to specify how each camera will record during normal and event conditions.

TL: Records at the Time-lapse Record Rate under normal conditions. Does not change record rate during an event.

Event: Records during events at the Event Record Rate. Camera does not record under normal conditions.

Event + TL: Records at the Time-lapse Record Rate under normal conditions. Records at the Event Record Rate during events.



About Events: An Event is an action that the unit acknowledges by recording at the Event Record Rate, yet it is not cause for an Alarm. Events may be created two ways, text insertion and activity detection.

Example of an Event: A camera is pointed at the front door inside the lobby during business hours. With the Event Camera Settings Type set to Event, the unit does not record while the doorway is empty. When activity motion detection senses that someone is entering or leaving the doorway, the unit begins recording at the Event Record Rate.

Text Insertion Event: See section 11 for information about configuring the RS-232 text insertion data to notify the unit that the inserted text is an event.

Activity Detection Event: See Setup Parameters in section 7.7 for detailed information about configuring activity detection as an event in the menu system.

Pre Event Duration: The amount of time before the event you wish to be recorded at the Event Record Rate. Select from 0 to 5 seconds.

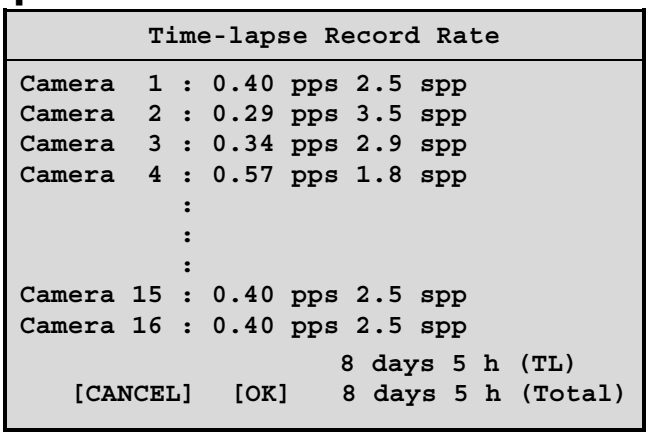
Post Event Duration: The amount of time after an event has ended that the unit will continue recording at the Event Record Rate. Select from 0 to 250 seconds.

❑ Main Menu → Record → Time-lapse Record Rate

The Time-lapse Record Rate is the rate the unit records during normal record operations, when there are no alarms, events, or activity present.

Record rates are measured in both Pictures Per Second (pps) and Seconds Per Picture (spp).

The maximum record rate is proportional to the number of video signals received. Meaning, the more cameras connected to the unit, the lower the maximum record rate. The maximum record rate for multiple cameras is 24pps (NTSC) and 20 (PAL). The maximum record rate for a single camera is 30pps (NTSC) and 25 (PAL).


Time-lapse Record Rate
Camera 1 : 0.40 pps 2.5 spp
Camera 2 : 0.29 pps 3.5 spp
Camera 3 : 0.34 pps 2.9 spp
Camera 4 : 0.57 pps 1.8 spp
:
:
:
Camera 15 : 0.40 pps 2.5 spp
Camera 16 : 0.40 pps 2.5 spp
8 days 5 h (TL)
[CANCEL] [OK] 8 days 5 h (Total)

The bottom right corner of the menu contains a record duration calculator. The top line indicates the estimated recording time for the unit in Time-lapse record mode only. The bottom line indicates the estimated recording time, taking into consideration the amount of time the unit will spend in Activity, Event, and/or Alarm record mode.

Use the **Up/Down Arrow** buttons to navigate, and the **Left/Right Arrow** buttons to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

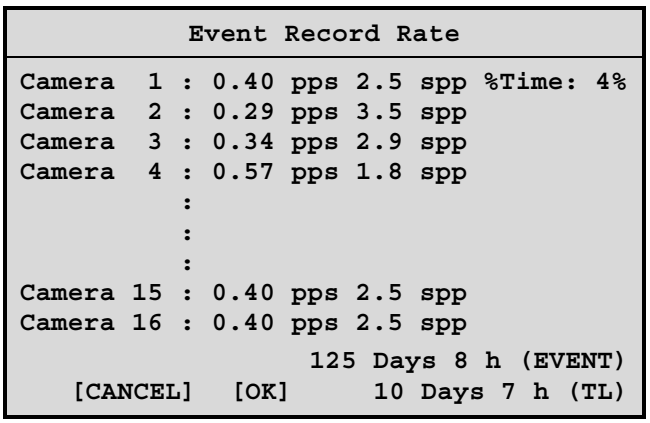
Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu → Record → Event Record Rate

The Event Record Rate is the rate the unit records when an event is activated. Events can be activated by text insertion or activity detection. See **Event Settings** on previous page.

Record rates are measured in both Pictures Per Second (pps) and Seconds Per Picture (spp).

The maximum record rate is proportional to the number of video signals received. Meaning, the more cameras connected to the unit, the lower the maximum record rate. The maximum record rate for multiple cameras is 24pps. The maximum record rate for a single camera is 30pps.


Event Record Rate
Camera 1 : 0.40 pps 2.5 spp %Time: 4%
Camera 2 : 0.29 pps 3.5 spp
Camera 3 : 0.34 pps 2.9 spp
Camera 4 : 0.57 pps 1.8 spp
:
:
:
Camera 15 : 0.40 pps 2.5 spp
Camera 16 : 0.40 pps 2.5 spp
125 Days 8 h (EVENT)
[CANCEL] [OK] 10 Days 7 h (TL)

The bottom right corner of the menu contains a record duration calculator. The top line indicates the estimated recording time of the cameras in Event record mode only. The bottom line indicates the estimated recording time, taking into consideration the amount of time the unit will spend in Time-lapse, Activity, Event, and/or Alarm record mode.

Use the **Up/Down Arrow** buttons to navigate, and the **Left/Right Arrow** buttons to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

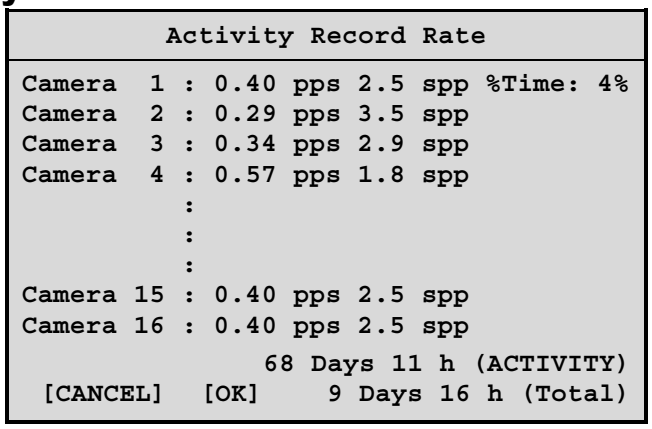
Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu → Record → Activity Record Rate

The Activity Record Rate is the rate the unit records during activity detection on cameras configured as Time-lapse.

Record rates are measured in both Pictures Per Second (pps) and Seconds Per Picture (spp).

The maximum record rate is proportional to the number of video signals received. Meaning, the more cameras connected to the unit, the lower the maximum record rate. The maximum record rate for multiple cameras is 24pps. The maximum record rate for a single camera is 30pps.


Activity Record Rate
Camera 1 : 0.40 pps 2.5 spp %Time: 4%
Camera 2 : 0.29 pps 3.5 spp
Camera 3 : 0.34 pps 2.9 spp
Camera 4 : 0.57 pps 1.8 spp
Camera 15 : 0.40 pps 2.5 spp
Camera 16 : 0.40 pps 2.5 spp
68 Days 11 h (ACTIVITY)
[CANCEL] [OK] 9 Days 16 h (Total)

The bottom right corner of the menu contains a record duration calculator. The top line indicates the estimated recording time of the cameras in Activity record mode only. The bottom line indicates the estimated recording time, taking into consideration the amount of time the unit will spend in Time-lapse, Activity, Event, and/or Alarm record mode.

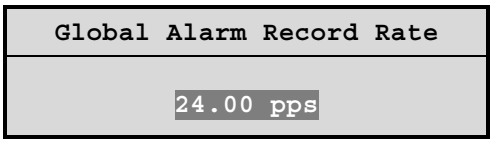
Use the **Up/Down Arrow** buttons to navigate, and the **Left/Right Arrow** buttons to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu → Record → Alarm Record Rate

During an alarm, the unit records at the alarm record rate. In the Alarm Record Mode menu the unit can be configured to:

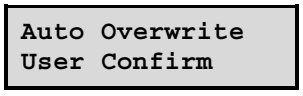


- Record the alarm camera exclusively
- Record all cameras at the record rate, dividing the maximum record rate among all cameras.
- Interleave the alarm camera with the other cameras so that the alarm camera is recorded at a higher rate.

The configuration of the Alarm Record Rate is closely associated with the Alarm Record Mode. For detailed information about configuring the Alarm Record Mode, see Alarm Record mode in section 7.5.

❑ Main Menu → Record → Record Mode

Use this menu to specify how the unit will handle data overwrite issues once the hard disk becomes full.



Auto Overwrite:

- Recording starts at the end of the last recording.
- Unit overwrites all previously recorded data, overwriting the oldest data first.
- The unit does not stop recording when disk becomes full.

User Confirm:

- Recording starts at the end of the last recording.
- Recording stops when disk becomes full.
- The user is prompted to authorize overwriting old data.

❑ Main Menu → Record → Disk Maintenance

Select from the following options, then press the **Enter** button to begin.

```
Delete
Undelete
Destroy
```

Delete: Delete all data from the hard disk (with the possibility of restoring it).

Undelete: Restore data that has been deleted, but not yet overwritten.

Destroy: Erase all data from the hard disk permanently, without the possibility of restoring it.

Caution! Pressing the **Enter** button will begin the Delete. Undelete, or Destroy process. No conformation box will appear. Once started, the process cannot be stopped.

7.5 Alarms

Use this menu to configure the alarm handling features of the unit.

Items marked with an asterisk **(*)** are present on 10 and 16 channel units only.

Caution! This units primary purpose is to furnish video multiplexing and recording with a multiscreen display. Although the unit has alarm handling and motion detection functions, the are considered secondary features. **This unit should not be the only alarm device on site.**

```
Input Configuration
Alarm Latch
Alarm Action*
External Alarm Action
Alarm Record Mode
Enable / Disable
Alarm History
Link to a Macro
Fullscreen Alarm*
Relay Configuration
Buzzer Setup
Videoloss Action
Pre Alarm Duration
Archive Alarms
-----------------
Exit
```

❑ Main Menu → Alarms → Input Configuration

Configure the alarm inputs as either Normally Open or Normally Closed.

```
    Alarm Input
-------------------
Alarm 01: N/OPEN
Alarm 02: N/CLOSED
Alarm 03: N/OPEN
Alarm 04: N/CLOSED
        :
        :
Alarm 15: N/OPEN
Alarm 16: N/CLOSED
```

Configure inputs as follows.

Normally Open Zero Potential Relay Contact: Configure in menu as Normally Open.

Normally Closed Zero Potential Relay Contact: Configure in menu as Normally Closed

TTL Active High: Configure in menu as Normally Closed.

TTL Active Low: Configure in menu as Normally Open.

Open Collector Active On: Configure in menu as Normally Open.

Open Collector Active Off: Configure in menu as Normally Closed.

❑ Main Menu → Alarms → Alarm Latch

This feature determines how the unit handles alarm conditions.

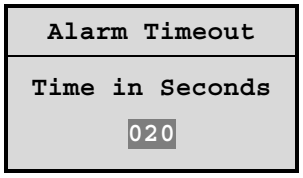
```
Latched
Transparent
Timed Out
```

Selecting from the following options.

Latched: The alarm is activated until it is silenced and acknowledged by the user.

Transparent: The alarm is active only while receiving alarm input. The alarm condition is canceled when the alarm input ceases.

Timed Out: The alarm condition is latched for the amount of time selected in this menu, then it is automatically silenced and acknowledged. If the alarm input exceeds the duration specified in this menu, the unit silences and acknowledges the alarm when the alarm input ceases. Select the timeout duration, the range is from 1 to 250 seconds.



Transparent alarms cannot be silenced and acknowledged. If transparent mode is preferred, but the ability to silence and acknowledge alarms is desired, select Timed Out and set the Alarm Timeout to two seconds.

❑ Main Menu → Alarms → Alarm Action

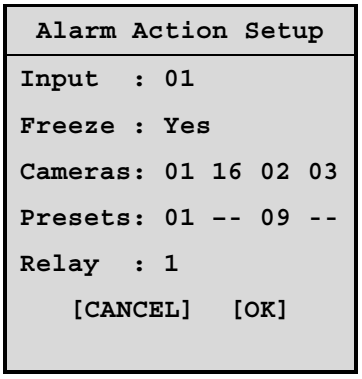
This menu is not available on 4-channel units. Only the full screen alarm display is available on the 4-channel unit.

Input: Select the input you wish to configure.

Freeze: Selecting **Yes** will freeze the alarm camera display at the time the alarm is activated.

Cameras: This setting determines the four cameras displayed on-screen when an alarm is received. The camera group contains the camera in alarm and three associated cameras.

By default, the first camera in the list is the camera in alarm. The second camera in the list is the camera that precedes the alarm camera numerically. The third and fourth cameras in the list are the two cameras following the alarm camera numerically.



Preset: Use this feature to send a camera to a preset when an alarm is activated. The preset number corresponds directly with the camera number located directly above it in this menu. Select from 1 through 16. If this field is left blank, the camera will not respond. In the example above, Camera 1 will go to Preset 1, while Camera 2 will go to Preset 9.

Relay: Configure which relay will be triggered when an alarm is activated per camera. Select from:

- 1
- 2
- 1 + 2
- None

Use the **Up/Down Arrow** buttons to navigate and the **Left/Right Arrow** buttons to change the values.

❑ Main Menu → Alarms → External Alarm Action

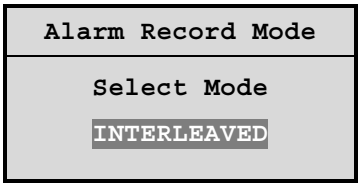
This feature is for future development, and has not yet been implemented.

❑ Main Menu → Alarms → Alarm Record Mode

Use this menu to determine how the unit will record cameras in alarm.

No Change: Unit changes to the Alarm Record Rate, but it does not give priority to the camera in alarm.

Exclusive: The unit records only the camera (or cameras) in alarm.

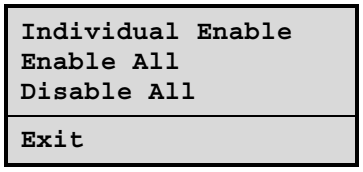


Interleaved: Alarmed cameras are recorded at a higher rate than non-alarm cameras. The unit accomplishes this by interleaving images of alarmed cameras between images from non-alarmed cameras in the record list. **Interleaved is the recommended mode of operation.**

Example of Record Lists:

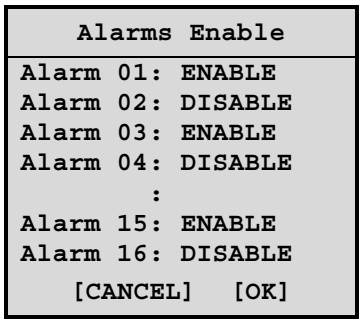
No Change record list for 8 cameras, Camera-4 in alarm.	1 2 3 **4** 5 6 7 8 1 2 3 **4** 5 6 7 8
Exclusive record list for 8 cameras, Camera-4 in alarm.	**4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4**
Interleaved record list for 8 cameras, Camera-4 in alarm.	1 **4** 2 **4** 3 **4** 5 **4** 6 **4** 7 **4** 8 **4** 1 **4**

❑ Main Menu → Alarms → Enable / Disable



Use this menu to Enable or Disable the alarm inputs. Select from the following.

- **Enable All**
- **Disable All**
- **Individual Enable:** Allow the user to access the Alarm Enable submenu, and enable or disable alarm inputs on a per camera basis.

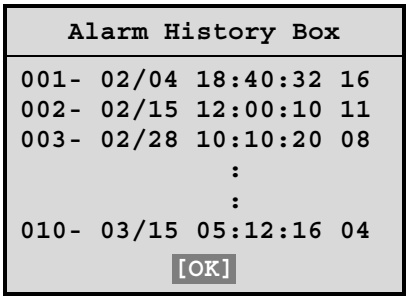


Use the **Up/Down Arrow** buttons to navigate, and the **Left/Right Arrow** buttons to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu → Alarms → Alarm History

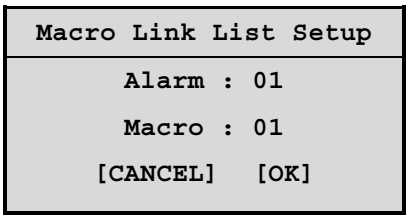


Use this window to view a list of the 100 most recent alarms. Alarms are displayed 10 at a time. Use the **Arrow** buttons to scroll through the alarms.

Information displayed in this window is:

- The alarms number in the list.
- The date of the alarm (month and day).
- The time of the alarm (hours, minutes, and seconds).
- The number of the camera input in alarm.

❑ Main Menu → Alarms → Link To A Macro

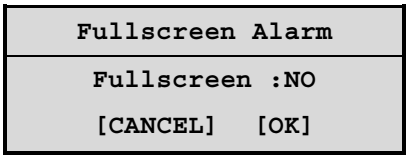


Use this menu to link an alarm input to a macro. If a link is created, a macro will run each time that alarm is activated.

Alarm: Select the alarm input you would like to link.

Macro: Select the macro number you wish to link to. Leave this setting blank if you do not wish to link to a macro.

❑ Main Menu → Alarms → Fullscreen Alarm



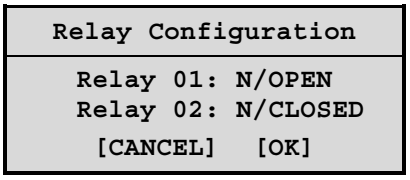
Selecting **Yes** from this menu will cause the unit to display the alarm camera fullscreen. Selecting **No** from this menu will cause the unit to display the 4-way display configured in the **Main Menu → Alarms → Alarm Action Setup** menu.

This selection is not available on 4-channel units.

❑ Main Menu → Alarms → Relay Configuration

Use this menu to configure each relay output as either:

- Normally Open
- Normally Closed



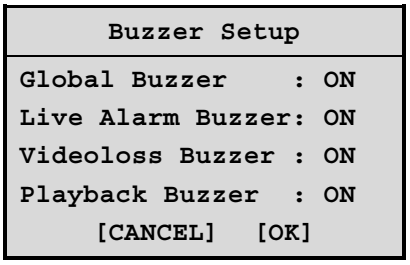
❑ Main Menu → Alarms → Buzzer Setup

Use this menu to configure the internal buzzer.

Global Buzzer: The Global Buzzer setting acts as a master On/Off switch. Setting the Global Buzzer to **OFF** deactivates all buzzer activity.

Live Alarm Buzzer: Activates while receiving alarm input.

Videoloss Buzzer: Activates when video loss is detected.



Disabling the Videoloss buzzer disables all videoloss buzzer activity. Videoloss buzzers may be disabled on a per camera basis in the **Alarms → Videoloss Action** menu.

Playback Buzzer: Activates during playback of recorded alarms.

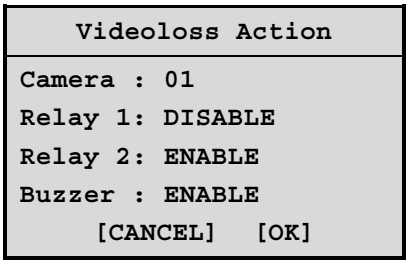
❑ Main Menu → Alarms → Videoloss Action

Use this menu to configure how the unit responds to videoloss.

Camera: Select the camera you wish to configure.

Relay 1: If enabled, the unit will activate Relay 1 when videoloss is detected.

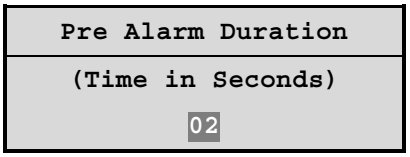
Relay 2: If enabled, the unit will activate Relay 2 when videoloss is detected.



Buzzer: Use this setting to disable the videoloss buzzer activation on a per camera basis. To disable videoloss buzzer activation on all cameras go to the **Main Menu → Alarms → Buzzer Setup** menu, described in the previous section.

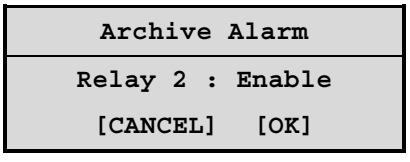
❑ Main Menu → Alarms → Pre Alarm Duration

During recording, the unit stores up to 5 seconds of recorded information in a buffer. This data can be automatically retrieved when an alarm is activated. Select the amount of time just previous to the activation of an alarm you wish to retrieve.



❑ Main Menu → Alarms → Archive Alarms

Selecting **Enable** from this menu will cause the unit to activate Relay 2 if a malfunction occurs while archiving.

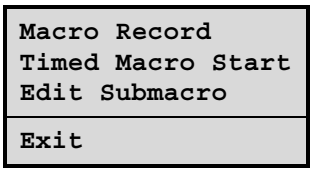


7.6 Macro

A macro is a recorded sequence of keystrokes. The number of macros depends on the number of camera inputs (4, 10 or 16). Each macro can have up to 32 keystrokes.

Use this menu to:

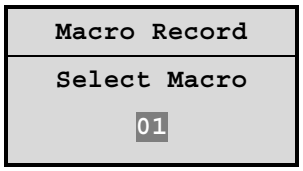
- Enter Macro Record mode.
- Program a scheduled start time for a macro.
- Edit the RS-232 command string for each submacro.



❑ Main Menu → Macro → Macro Record

To begin recording a macro:

1. Select the macro you wish to record, then press the **Enter** button. The unit will automatically exit the menu system and go to a starting point. Macro Record mode is indicated as **F** and the **Macro Number** on-screen.



2. From this point, begin recording the desired keystroke sequence. Record up to 32 keystrokes. If 32 keystrokes are exceeded, the unit will end the macro recording automatically.

Keystroke count while in the menu system: While recording a macro, entering the menu system, changing multiple menu items, and exiting the menu system are only counted as one keystroke. Using the **Arrow** buttons to navigate the menu system does not count as keystrokes. Once the menu system has been exited, re-entering the menu system will count as a second keystroke.

Not all menu items can be programmed using macros. For a complete list of macro programmable menu items, see the table below.

During macro recording, the following button combinations perform special functions.

Button Sequence	Resulting Action
Function then **1.**	Activate Relay 1 output.
Function then **2.**	Reset Relay 1 output.
Function then **3.**	Pause macro for 1 second.
Function then **4.**	Pause macro for 5 seconds.
Function then **5.**	Activate Relay 2 output. Available on 10 and 16 channel units only.
Function then **6.**	Reset Relay 2 output. Available on 10 and 16 channel units only.
Function, Function, then **Submacro number.**	Program a specific submacro to activate when the macro is run.
Function then **Enter.**	End macro recording

3. When finished programming, press the **Function** button then the **Enter** button to end the macro recording. A form is provided in section 13 to keep track of recorded macro functions.

Macro Programmable Menu Items

The following items are organized in the order they appear in the menu system.

Main Menu

Time/Date

- Time / Date Display
- Time Format
- Date Format
- Set Time
- Set Date

Sequencing

- Multiscreen Dwell
- Full Screen Dwell

Record

- Record Quality
- Event Settings
- Timelapse Record Rate
- Event Record Rate
- Activity Record Rate
- Alarm Record Rate
- Record Mode

Alarms

- Input Configuration
- Alarm Latch
- Alarm Latch → Timed Out
- Alarm Record Mode
- Alarm Enable / Disable
- Link to a Macro

Motion Detection

- Enable / Disable Detection

Camera Setup

- Camera Titles
- Camera Disable

Video Archive Setup

- Archive Mode

Communications → RS-232

- Port 1 → Baud Rate
- Port 2 → Baud Rate

Factory Settings

- Factory Language

QuickInstall Menu

Monitor Setup

Monitor Mode (Duplex Models only)

❑ Main Menu → Macro → Timed Macro Start

Use this menu to program scheduled start times for macros. Up to 20 scheduled start times can be programmed in this menu.

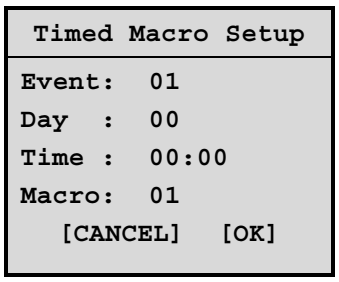
Event: Select the scheduled start event you wish to edit.

Day: Select the start day of the macro. Select a day of the week (1 through 7) corresponding to the programmed Day 1 in the Date Setup Menu. Select ** (double asterisks) to run the macro every day. Select **00** to cancel the scheduled start time.

Time: Select the start time for the macro.

Macro: Select the desired macro.

A form is provided in section 13 to keep track of scheduled macros.



❑ Main Menu → Macro → Edit Submacro

A submacro is an RS-232 command string used to control a peripheral device. Submacros are activated during macros. See the table on page 49 for information about programming a macro to activate a submacro.

Select the submacro you wish to edit from the menu system. This menu will appear. Use this menu to create the RS-232 command string. Press the **Enter** button to Enter and Exit the submacro edit mode. Use the **Arrow** buttons to navigate among the fields and change the values. Each byte value can be set from 0 to 255.

```
Edit Submacro 01

080 066 066 010 --- --- --- --- --- ---
[P] [B] [B] [0]

          [CANCEL]   [OK]

ENTER key starts Submacro edit
```

7.7 Motion Detection

Use this menu to:

- Enable motion detection on a per camera basis.
- Activate individual zones in a scene to respond to motion detection.
- Activate the on-screen motion detection indicator.
- Set motion detection as Activity detection or Intrusion Detection.
- Configure the motion detection parameters on a per camera basis.

```
Enable/Disable Detection
Setup Active Zones
Indicate Detection

Activity/Intrusion
Setup Parameters

Exit
```

❑ Main Menu → Motion Detection → Enable/Disable Detection

Selecting **Enable All** or **Disable All** from this menu will activate or deactivate motion detection on all cameras.

Selecting **Individual Enable** from this menu will bring up the following menu.

```
Individual Enable
Enable All
Disable All

Exit
```

Individual Enable Menu

Use this menu to enable or disable motion detection on a per camera basis.

Use the **Up/Down Arrow** buttons to navigate, and the **Left/Right Arrow** buttons to change the values.

```
Detection Enable

Detection on Camera 01: Enable
Detection on Camera 02: Disable
Detection on Camera 03: Enable
                        :
                        :
Detection on Camera 16: Enable
          [CANCEL]   [OK]
```

❑ Main Menu → Motion Detection → Setup Active Zones

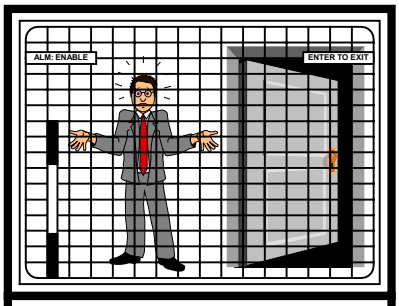
Use this menu to select the camera you wish to configure. Use the **Arrow** buttons to select the desired camera, then press the **Enter** button.

The unit will display the Activity Grid Setup Screen for the desired camera.

```
Active Zones

Select Camera
      01
```

Activity Grid Setup Screen



Activity Grid Setup Screen

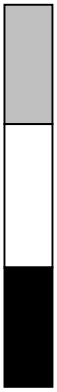
Use this screen to enable motion detection for individual zones within the scene. Navigate the screen with the flashing cursor using the **Arrow** buttons. The text near the top left corner of the screen indicates what action will occur as the cursor passes through each zone. Select from the following using the **Alarm** button:

No Change: This allows the cursor to navigate freely across the screen without affecting changes to the zones that it passes through.

Enable: Each zone the cursor passes through will be enabled for motion detection. Enabled zones are indicated on-screen with a gray square in the center of each zone.

Disable: Each zone the cursor passes through will be disabled for motion detection. Disabled zones are indicated as clear in the center.

Sensitivity Scope



Use the sensitivity scope to adjust the motion detection sensitivity for the scene. The sensitivity scope is the bar located near the lower left-hand corner of the screen.

The black bar raises and lowers to indicate motion detection. When the black bar reaches the red bar, a motion detection alarm is activated.

Adjusting Motion Detection Sensitivity: Raise and lower the red bar to change the motion detection sensitivity.

On 10 and 16-channel units: Use **Number** buttons 1 through 10 to change the sensitivity, 10 being the most sensitive.

On 4-channel units: Motion Detection Sensitivity must be adjusted numerically in the **Motion Detection → Setup Parameters** menu.

❑ Main Menu → Motion Detection → Indicate Detection

Motion Detection may be indicated on-screen by displaying the letter **M**.

Use this menu to turn this feature On or Off.

```
Indicate Detection
Detection  : ON
[CANCEL]  [OK]
```

❑ Main Menu → Motion Detection → Activity/Intrusion

Use this menu to select either Activity Motion Detection or Intrusion Motion Detection. This setting determines what parameters will appear in the **Motion Detection → Setup Parameters** menu.

Use the **Up/Down Arrow** buttons to navigate and the **Left/Right Arrow** buttons to change the values.

```
Motion Detection Type
Camera 01: Activity
Camera 02: Intrusion
Camera 03: Activity
          :
          :
Camera 16: Activity
    [CANCEL]  [OK]
```

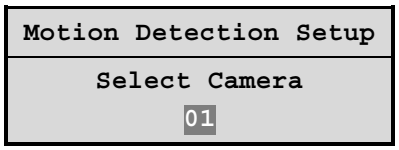
Activity Vs. Intrusion

Activity Detection is a simple type of motion detection having only a sensitivity setting and a relay output. Intrusion Detection is a more sophisticated type of motion detection, with additional features such as false alarm rejection levels, minimum target size, and an alarm output.

❑ Main Menu → Motion Detection → Setup Parameters

Use this menu to select the camera you wish to configure.

The setting from the **Motion Detection → Activity/Intrusion** menu will determine which menu will appear.



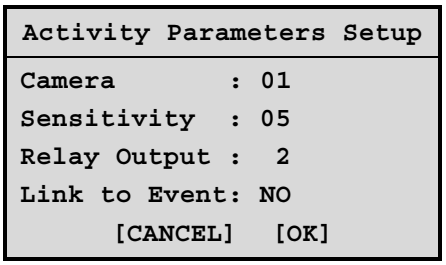
Activity Detection Setup

Use this menu to configure the following parameters:

Sensitivity: Use the **Left/Right Arrow** buttons to change the motion detection sensitivity, 10 being the most sensitive.

Relay Output: The unit may be configured to activate a relay output when motion detection is present. Select either **1**, **2**, **1+2** (both relays), or **None**.

Link to Event: Selecting **Yes** in this menu will activate the event record speed when activity detection is present.



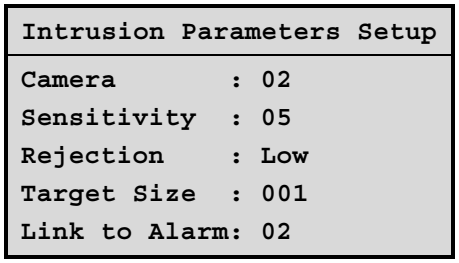
This setting is only present if the camera is configured as an event camera in the Event Settings menu (see Event Settings in section 7.4).

Intrusion Detection Setup

Use this menu to configure the following parameters:

Sensitivity: Use the **Left/Right Arrow** buttons to change the motion detection sensitivity, 10 being the most sensitive.

Rejection: Configure the units false alarm rejection feature by selecting either **Low**, **Medium**, or **High**. These settings are based on the duration of time motion is detected. Low being the most sensitive.



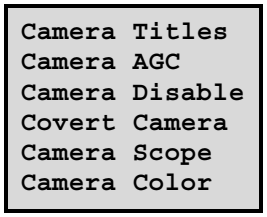
Target Size: This setting is the minimum number of zones (from the 16 x 16 grid) that must be activated simultaneously before it is considered motion detection.

Link To Alarm: Select the alarm number that you wish to activate when motion detection is activated.

7.8 Camera Setup

Use this menu to:

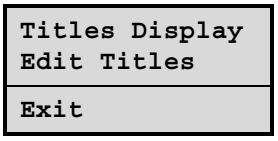
- Edit the title for each camera.
- Adjust the Automatic Gain Control.
- Disable or Enable camera inputs.
- Specify cameras as covert (recorded but not displayed).
- View the Luminance Histogram of a camera.
- Specify if cameras are color or monochrome.



❑ Main Menu → Camera Setup → Camera Titles

Use this menu to:

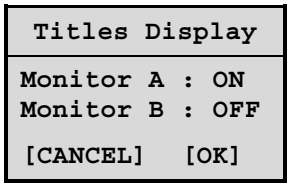
- Specify if the camera titles will be displayed on the monitors.
- Edit the title for each camera.



Titles Display

Camera titles may be displayed on either monitor. Use this menu to turn this feature On or Off.

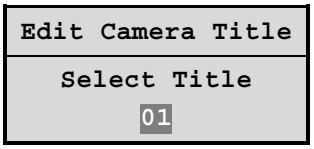
Use the **Up/Down Arrow** buttons to navigate and the **Left/Right Arrow** buttons to change the values.



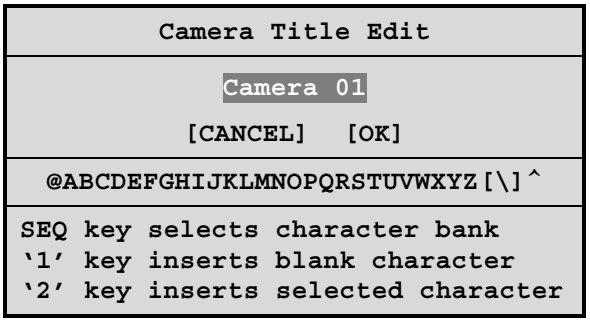
Edit Titles

Use the **Arrow** buttons to select the camera whose title you wish to configure, then press the **Enter** button.

The Camera Title Edit menu will appear.



Camera Title Edit Menu

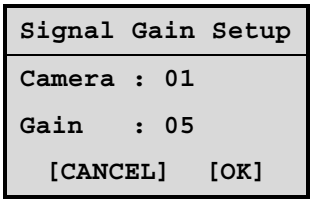


1. With the camera title selected, press the **Enter** button. The menu will enter the Edit mode and the character bank will appear in the center of the menu.
2. Press the **Sequence** button to select the desired character set.
3. Use the **Left/Right Arrow** buttons to navigate the cursor in the camera title.
4. Use the **Up/Down Arrow** buttons to navigate the cursor in the character bank.
5. Press the **Number 1** button to insert a blank character or press the **Number 2** button to insert the selected character.
6. When finished editing the title, press the **Enter** button to exit the edit mode.
7. **Save changes and exit the menu:** Select **[OK]**, then press the **Enter** button.
8. **Exit the menu without making changes:** Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu → Camera Setup → AGC

Use the Automatic Gain Control (AGC) to adjust the video input signal level for cameras whose level is outside the normal range. The default gain setting is 5.

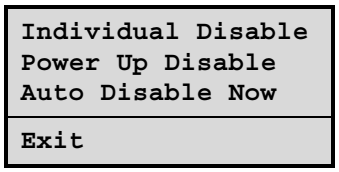
Use the **Up/Down Arrow** buttons to navigate and the **Left/Right Arrow** buttons to change the values.



❑ Main Menu → Camera Setup → Camera Disable

Use this menu to:

- Enable or Disable cameras individually
- Configure the unit to disable cameras automatically at power-up if video loss is detected.
- Automatically disable all inputs detecting videoloss.



Individual Disable

Use this menu to Disable or Enable each camera input individually.

Use the **Up/Down Arrow** buttons to navigate and the **Left/Right Arrow** buttons to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

```
Camera Disable
Camera 01: Disable
Camera 02: Enable
Camera 03: Disable
         :
         :
Camera 16: Enable
  [CANCEL]   [OK]
```

Power Up Disable

With this feature turned On, the unit will automatically detect which inputs are experiencing videoloss at power-up, and disable them.

Use the **Up/Down Arrow** buttons to navigate and the **Left/Right Arrow** buttons to change the values.

```
Power Up Disable
Disable : OFF
[CANCEL]   [OK]
```

Auto Disable Now

This feature detects which inputs have video signals and which are experiencing videoloss. When this feature is activated, the unit will automatically disable the inputs experiencing videoloss. The unit will also re-enable video inputs that were previously disabled if a video input signal is detected.

❑ Main Menu → Camera Setup → Covert Camera

This feature removes cameras from all live displays while continuing to record them, so that the users and the public are unaware that the camera is being recorded. Covert cameras are viewable during playback.

Select **Yes** in this menu to configure a camera as covert.

Use the **Up/Down Arrow** buttons to navigate and the **Left/Right Arrow** buttons to change the values.

```
Covert Camera
Camera 01: NO
Camera 02: YES
Camera 03: NO
         :
         :
Camera 16: NO
  [CANCEL]   [OK]
```

❑ Main Menu → Camera Setup → Camera Scope

Use this feature to view the Luminance Histogram of each camera. Use the **Arrow** buttons to select the desired camera, then press the **Enter** button. The selected camera will be displayed with the histogram superimposed over it.

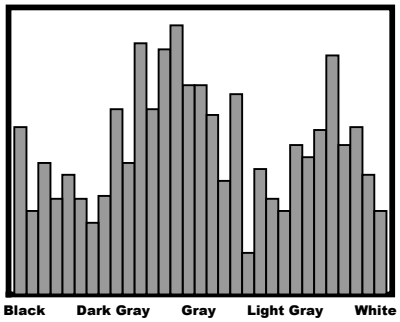
```
Camera Scope
Select Camera
     01
```

Luminance Histogram

A Luminance Histogram is an graphical representation of how many times each gray-level value occurs in an image.

Use this feature to analyze and optimize the video input signal.

This histogram shows a fairly even distribution of gray levels, the peaks in the gray and light gray/white areas.



❑ Main Menu → Camera Setup → Color Setup

Use this menu to:

- Specify each camera individually as color or monochrome.
- Command the unit to automatically detect color and monochrome cameras, then configure the inputs appropriately.

```
Color Setup
Color Detect Now
```

Color Setup

Use this feature to select each camera individually, and specify it as color or monochrome.

Use the **Up/Down Arrow** buttons to navigate and the **Left/Right Arrow** buttons to change the values.

```
    Color Setup
Camera 01: Color
Camera 02: Mono
Camera 03: Color
          :
          :
Camera 16: Mono
   [CANCEL]   [OK]
```

Color Detect Now

With **Color Detect Now** highlighted, press the **Enter** button. The unit will automatically scan each input and detect video signals, then configure them as color or monochrome. Use this feature to detect color signals on cameras that have been connected after the unit was initially setup.

7.9 Video Archive Setup

Data recorded by the unit can be archive to an external archive device.

Use this menu to:

- Configure how to unit archives data.
- Configure how the unit handles data overwrite issue when the archive device becomes full.
- Erase the recorded data on a compatible archive device.

```
Archive Mode
Archive Setting
Erase Medium
Exit
```

❑ Main Menu → Video Archive Setup → Archive Mode

Select from the following items.

Archiving Off: Turns archiving off.

Selective Archive: This feature allows user to individual select record data to be archived. Once the menu system has been exited, pressing the **Search** button will activate the selective archiving.

```
Archiving OFF
Selective archive
Restore from archive
Background archive
```

Restore From Archive: This feature allows the user to search the archive device for video files to restore back onto the unit's hard disk for viewing.

Background Archive: Commands the unit to record data to both the hard disk and the archive device simultaneously.

❑ Main Menu → Video Archive Setup → Archive Setting

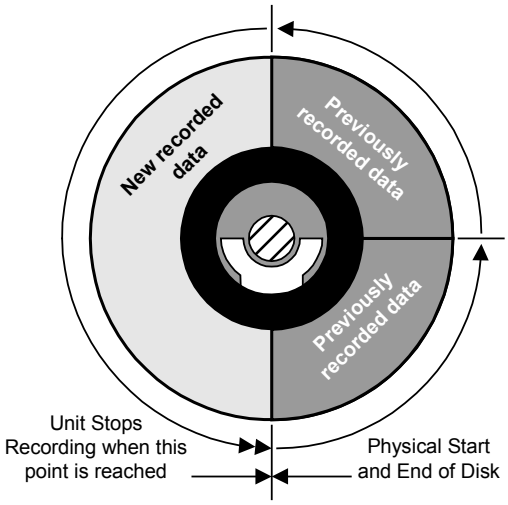
Use this menu to specify how the unit will handle data overwrite issues once the archive device becomes full. For a detailed description of each mode, please read the following descriptions.

```
No overwrite
Write once
Continuous
```

No Overwrite

Functions of No Overwrite mode:

- Recording always starts at the end of the most recent recording.
- Recording stops when the archive device becomes full. The unit will not record over previously recorded data.
- When the archive device becomes full, the unit displays an on-screen message indicating that the device is full and that the archive device has stopped recording. The user must acknowledge the message by pressing the **Enter** button.

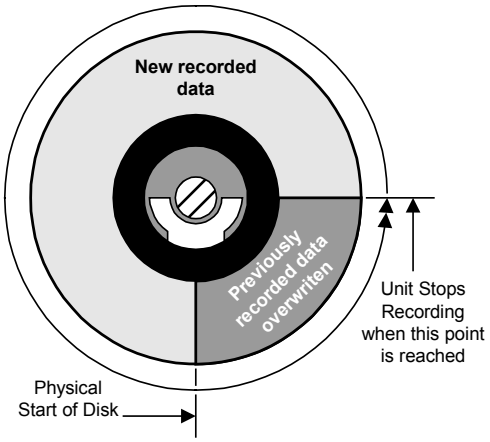

New recorded data
Previously recorded data
Previously recorded data
Unit Stops Recording when this point is reached
Physical Start and End of Disk

No Overwrite Mode

Write Once

Functions of Write Once mode:

- Recording always starts at the end of the most recent recording.
- The unit overwrites all previously recorded data.
- Recording stops before the unit overwrites any of the new recorded data (data from the current record session).
- When the device becomes full, the unit displays an on-screen message indicating that the archive device is full, and has stopped recording.
- The user must replace the archive medium or use the Erase Medium feature if the DVMRe to continue recording. Press the record button to continue recording.

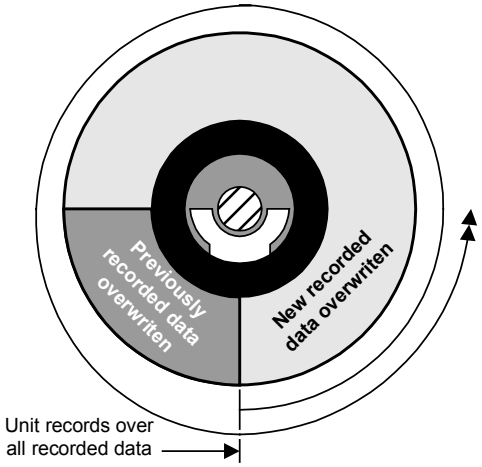

New recorded data
Previously recorded data overwriten
Unit Stops Recording when this point is reached
Physical Start of Disk

Write Once Mode

Continuous

Functions of Continuous Overwrite mode:

- Recording always starts at the end of the most recent recording.
- The unit overwrites all previously recorded data.
- The unit overwrites new recorded data (data from the current record session).
- Unit never stops recording.
- Record capacity display will not count down.



Continuous Overwrite Record

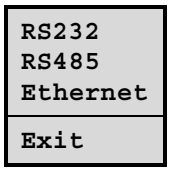
❑ Main Menu → Video Archive Setup → Erase Medium

Use this feature to erase all of the recorded data on an archive device. With **Erase Medium** highlighted, press the **Enter** button. If a compatible archive device is connected, a confirmation box will appear, otherwise no action will occur.

7.10 Communications

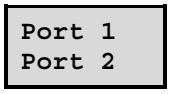
Use this menu to:

- Configure the baud rates and settings for the RS-232 ports.
- Configure the network address for the RS-485 network.
- Configure the Ethernet address and networks settings.



❑ Main Menu → Communications → RS-232

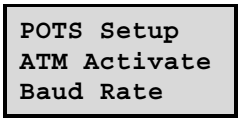
Select the port you wish to configure then press the **Enter** button.



Port 1

Use this menu to:

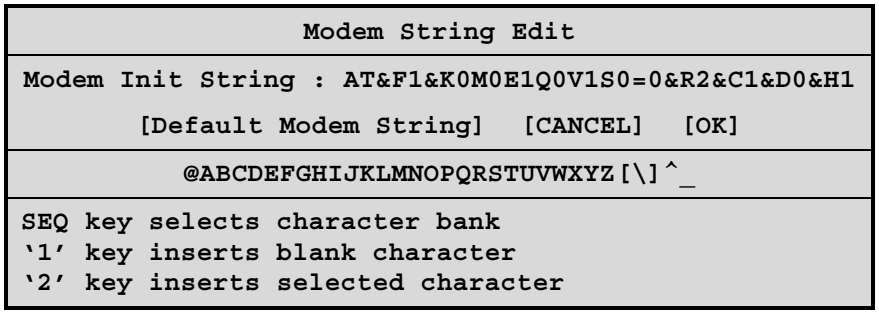
- Configure the modem initialization string.
- Configure the unit to accept text data.
- Adjust the baud rate.



The unit must be configured to either connect to a modem or receive text data from sources such as an ATM. The unit cannot do both concurrently.

Pots Setup

The default modem string is for use with model 5686 US Robotics modems. Consult with the modem manual before attempting to make any changes. It is strongly recommended that the modem initialization string be configured by a qualified technician.


Modem String Edit
Modem Init String : AT&F1&K0M0E1Q0V1S0=0&R2&C1&D0&H1
[Default Modem String] [CANCEL] [OK]
@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_
SEQ key selects character bank
'1' key inserts blank character
'2' key inserts selected character

1. With the Modem Init String highlighted, press the **Enter** button to enter the Edit mode. The character bank will appear in the center of the menu.
2. Press the **Sequence** button to select the desired character bank.
3. Use the **Left/Right Arrow** buttons to navigate the Modem Init String.
4. Use the **Up/Down Arrow** buttons to select a character from the character bank.
5. Use the **Number 2** button or the **Left/Right Arrow** button to insert the desired character from the character bank into the Modem Init String and advance to the next character.
6. Use the **Number 1** button to insert a blank character.
7. When finished, press the **Enter** button.
8. To save the changes and reboot, select **OK,** then press the **Enter** button. The unit will only reboot if changes were made to the Modem Init String.
9. To exit the menu without making changes, select **Cancel**, then press the **Enter** button. Pressing the **Menu** button also exits the menu without making changes.

ATM Activate

Use this setting to configure the unit to receive text data. With the unit configured to receive text data, the unit cannot be connected to a modem. To configure the unit to communicate with a modem, select **POTS Setup**.

With **ATM Activate** highlighted, press the **Enter** button. A confirmation box appears. To continue, press the **Enter** button.

Baud Rate

Use this menu to configure the baud rate for Port 1. Use the **Up/Down Arrow** buttons to select from the menu.

Save changes and exit the menu: Press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button.

```
 9600 Baud
19200 Baud
38400 Baud
57600 Baud
```

Port 2

RS-232 Port 2 is used for external control of the unit via a PC.

Use this menu to configure the baud rate for Port 2. Use the **Up/Down Arrow** buttons to select from the menu.

Save changes and exit the menu: Press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button.

```
 1200 Baud
 2400 Baud
 4800 Baud
 9600 Baud
```

❑ Main Menu → Communications → RS-485

Connect several units to a single keyboard, or vice-versa. Up to 32 units (any combination of multiplexers and keyboards) can be networked together.

Use this menu to specify the units unique network address.

Save changes and exit the menu: Press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button.

```
Network Address
      001
```

❑ Main Menu → Communications → Ethernet Settings

The ethernet is used to connect to the unit from a PC for viewing of live or recorded images. Use this menu to configure the Ethernet communications settings.

Select from the following:

Ethernet: Select Enable or Disable.

IP Address / Subnet Mask / Gateway: Consult with a qualified Network Administrator or an MIS professional to configure this setting.

```
      Ethernet Settings
Ethernet   : Enable
IP Address :  10. 90.253. 10
Subnet Mask: 255.255.  0.  0
Gateway    :  10. 90.  0.  1
        [CANCEL]   [OK]
```

How The Unit Functions During An Ethernet Session

The following items occur when a user accesses the unit from a PC, via the ethernet:

- The unit disables its front panel buttons.
- All RS-232 and RS-485 communications are disabled.
- The Record Mode LED is lit, even if the unit is not recording.
- An on-screen indicator appears showing the last two segments of the connected unit's IP address.

7.11 Front Panel Lock

Use this feature to lock the front panel keypad. While locked, the only operational key on the front panel is the **Menu** button. To unlock the front panel, enter the Installer password and return to this menu.

Highlight the item you wish to select.

Save changes and exit the menu: Press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button.

7.12 Factory Settings

Return To Factory Defaults

From the Factory Setting menu, press the **Enter** button. A password box will appear. Enter the Factory Default password. Select **OK**, then press the **Enter** button.

Factory Default Password	
10 and 16-Channel	**8 1 1 1**
4-Channel	**4 1 1 1**

The unit will reboot, returning all settings (except the time and date) to the factory defaults. Due to the large size of the hard disk, the reboot may take several minutes.

Change Language

From the Factory Setting menu, press the **Enter** button. A password box will appear. Enter the Language password. Select **OK**, then press the **Enter** button.

Language Password	
10 and 16-Channel	**5 4 1 5**
4-Channel	**1 4 1 4**

A menu will appear displaying the two language selections, English and French. Use the **Up/Down Arrow** buttons to select the desired language. The alternate language may be different depending on region.

Save changes and exit the menu: Press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button.

7.13 Passwords

Use this feature to change the Installer and Operator passwords.

To change the password:

1. Highlight the password you wish to change, then press the **Enter** button. A password box will appear.
2. Enter the new password using the **Number** buttons.
3. Highlight **OK**, then press the **Enter** button.
4. Re-enter the password.
5. Highlight **OK**, then press the **Enter** button. The user will be prompted, indicating if the password was entered correctly and changed.

8 The QuickInstall Menu

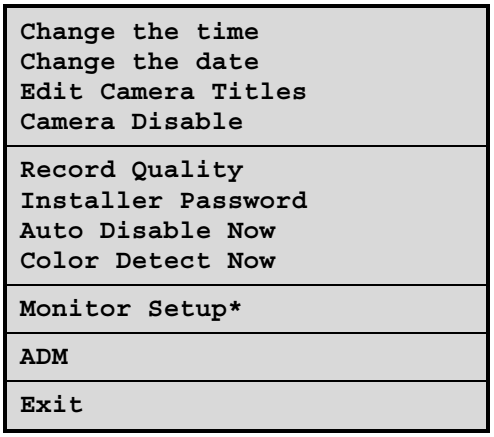
8.1 QuickInstall Menu Overview

After installation is complete, it is strongly recommended that, as a minimum, the items in the QuickInstall menu be configured before the unit is used.

All items located in the QuickInstall menu (except Monitor Setup and ADM) are also found in the Main menu. These items are provided in the separate QuickInstall menu as a convenience for the installer.

Monitor Setup and ADM are unique to the QuickInstall menu, and are covered in detail later in this section.

Use the following table to find detailed information about configuring specific items from the QuickInstall menu.



***Duplex Only**

QuickInstall Menu Item	Primary Menu Location	Section In Manual
Change the time	Main Menu → Time/Date → Set Time	7.2
Change the date	Main Menu → Time/Date → Set Date	7.2
Edit Camera Titles	Main Menu → Camera Setup → Camera Titles	7.8
Camera Disable	Main Menu → Camera Setup → Camera Disable	7.8
Record Quality	Main Menu → Record → Record Quality	7.4
Installer Password	Main Menu → Passwords → Installer Password	7.13
Auto Disable Now	Main Menu → Camera Setup → Camera Disable → Auto Disable Now	7.8
Color Detect Now	Main Menu → Camera Setup → Camera Color → Color Detect Now	7.8

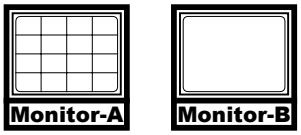
8.2 Monitor Setup

The Monitor mode determines which monitor will display the video playback. This feature is only available on duplex units.

Highlight the desired mode, then press the **Enter** button.

Single Monitor Mode Vs. Dual Monitor Mode

Single Monitor Mode

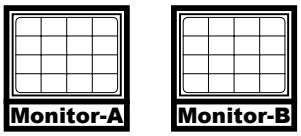


Monitor-A: Full Screen or Multiscreen Video Playback is displayed.

Monitor-B: Live Full Screen images are displayed.

Video playback replaces the live video on Monitor-A.

Dual Monitor Mode



Monitor-A: Live Full Screen or Multiscreen images are displayed.

Monitor-B: Full Screen or Multiscreen Video Playback is displayed.

The primary function of Dual Monitor mode is to provide multiscreen playback on Monitor-B, while continuing to display live multiscreen video on Monitor-A. Dual Monitor mode requires two monitors.

Playback in Dual Monitor mode is the only time a multiscreen will be displayed on Monitor-B.

8.3 ADM (Auto Delete Mode)

The ADM feature prevents the unit from displaying or archiving any search results that are more than thirty days old.

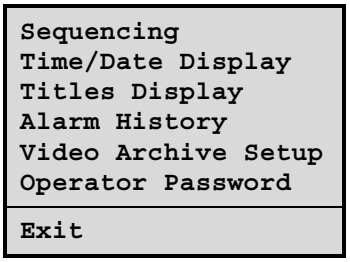
This feature may be required by law in some jurisdictions. If required by local authorities, the ADM feature must be turned On. Typically this feature is turned Off.

9 The Operator & SystemView Menus

9.1 The Operator Menu

The Operator menu is provided so that the user has access to a limited number of menu items. These menu items are primarily monitor display setup options, so that the user may "personalize" the monitor displays during their shifts. Other options include video archive setup and changing the operator password.

None of the items are unique to the Operator menu. All items located in the Operator menu are also found in the Main menu.



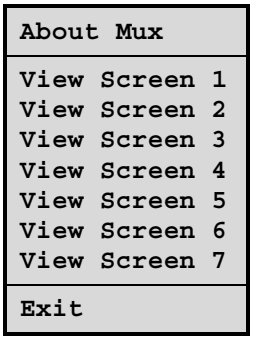
Use the following table to find detailed information about configuring specific items from the Operator menu.

Operator Menu Item	Primary Menu Location	Section In Manual
Sequencing	Main Menu → Sequencing	7.3
Time/Date Display	Main Menu → Time/Date → Time/Date Display	7.2
Titles Display	Main Menu → Camera Setup → Camera Titles → Title Display	7.8
Alarm History	Main Menu → Alarm → Alarm History	7.5
Video Archive Setup	Main Menu → Video Archive Setup	7.9
Operator Password	Main Menu → Password → Operator Password	7.13

9.2 The SystemView Menu

About Mux menu: This menu provides information such as model designation, software version, hard disk size, IP address, and hardware address.

View Screens 1 through 7: These menus provide an overview of the units current operating parameters and the menu settings selected by the user or installer. Each View Screen is described in the following tables.



9.3 The View Screens

View Screen 1

Alarm Input

- **Enable/Disable:** 1 = Enabled, 0 = Disabled
- **Normally Open or Normally Closed:** 0 = Open, C = Closed
- **Macro:** Macro number if activated.

Alarm Action

- **Freeze:** 1 = Freeze, 0 = No Freeze
- **Cameras:** Primary camera in alarm and three associated cameras.
- **Relay:** 1, 2, 1+2, or None

External Alarm Action

- This feature is currently unavailable.

View Screen 2

Camera

- **Enable/Disable:** 1 = Enabled, 0 = Disabled
- **Signal Gain:** AGC setting from 1 through 10.
- **Covert Camera:** Yes or No.
- **Color or Mono**
- **Camera Title**

Videoloss Action

- **Relay 1:** 1 = Enabled, 0 = Disabled
- **Relay 2:** 1 = Enabled, 0 = Disabled
- **Buzzer:** 1 = Enabled, 0 = Disabled

View Screen 3

Motion Detection

- **Enable/Disable:** 1 = Enabled, 0 = Disabled
- **Activity or Intrusion Detection:** I = Intrusion, A = Activity
- **Sensitivity:** 1 through 10.
- **Rejection Ratio:** High, Medium, or Low.
- **Target Size:** 1 through 256.
- **Alarm Camera:** 1 through 4, 10 or 16.

View Screen 4

Record Rate

- **Event Camera Settings:** T = Timelapse, E = Event, ET = Event and Timelapse
- **Timelapse Record Rate:** In pictures per second (pps).
- **Event Record Rate:** In pictures per second (pps).
- **Pre Event Duration:** 0 to 5 seconds.
- **Post Event Duration:** 0 to 200 seconds.
- **Acitvity Record Rate:** In pictures per second (pps).
- **Record Quality:** High, Medium, or Low.

View Screen 5

- **Time and Date Display A:** On or Off.
- **Time and Date Display B:** On or Off.
- **Time Format**
- **Date Format**
- **Titles Display A:** On or Off.
- **Titles Display B:** On or Off.
- **Master Clock:** Yes or No.
- **Multiscreen Dwell:** In seconds.
- **Full Screen Dwell:** In seconds.
- **Auto Disable:** On or Off.
- **Indicate Detection:** On or Off.

View Screen 6

- **Baud Rate Port 1**
- **Baud Rate Port 2**
- **Network Address**
- **Record Mode:** User Confirm or Auto Overwrite
- **Disk Maintenance**
- **Factory Setting**
- **Keyboard Lock:** On or Off
- **Monitor Setup:** Single or Dual

View Screen 7

- **Global Buzzer:** On or Off.
- **Live Alarm Buzzer:** On or Off.
- **Video Loss Buzzer:** On or Off.
- **Playback Buzzer:** On or Off.
- **Relay 1:** Normally Open or Normally Closed.
- **Relay 2:** Normally Open or Normally Closed.
- **Alarm Latch:** T = Transparent, L = Latched, TO (020) = Timed Out (Time)
- **Alarm Record Mode:** Interleaved, Exclusive, or No Change.
- **Full Screen Alarm:** Yes or No. This feature is not available on the 4-Channel units.
- **Global Alarm Record Rate:** In pictures per second (pps).
- **Pre Alarm Duration:** In seconds.
- **Archive Alarm:** Enable or Disable.

10 Technical Specifications

General	
Power Supply	120-240 Volt AC. Auto ranging adapter included.
Input Voltage	12 Volt DC
Power Consumption	35 Watts Max.
Operating Temperature Range	Operating: 0 to 40°C. Storage: -20 to +60°C.
Relative Humidity Range (Non-Condensing)	Operating: 10% to 80%. Storage: 10% to 95%
Dimensions	17.5 x 14 x 1.7 Inches. 1U, 19 inch rack unit.
Weight	9 Lbs.

Connections	
10/100 Ethernet Port	RJ-45 Connector.
RS-232 Port 1	DB-9 Male Connector.
RS-232 Port 2	DB-9 Female Connector.
Camera Inputs	BNC connectors. Auto Terminating. Color & Mono.
Monitor-A Output (Y/C)	4-pin MiniDIN Connector.
Monitor-A Output (Composite)	BNC Connector
Monitor-B Output (Composite)	BNC Connector
RS-485 Port	Two Looping RJ-45 Connectors
SCSI Port	50 pin, High Density SCSI-2 female connector.
Alarm I/O Port	Use Supplied DB-25 PCB connector.

Video	
Video Signal Input	0.7 to 2.0 Volts peak-to-peak with Automatic Gain Control.
Video Signal Output	1 Volt peak-to-peak into 75-Ohm.
Input Termination	75-Ohm (Auto Terminating)
Display Memory	2048 x 512 Memory Array. 8 megabits.
Resolution	Horizontal: 720 Pixels. Vertical: 484 Lines.
Gray Scale	256 levels
Colors	Y:U:V 4:2:2, 16.8 Million Colors
Compression Standard	Wavelets

Alarms	
Inputs	1 per camera.
Relay Configuration	User programmable as Normally Open or Normally Closed.
Record Priority	Interleaved, Exclusive, or No Change.
Alarm Status Indicators	Relay Outputs, On-screen Indicators. Status retrievable via RS-232 port.

Motion Detection	
Zones Per Camera	256: 16 x 16 grid.
Sensitivity Settings	10 levels
Gray Levels Per Zone	256 levels
Motion Detection Status Output	Relay Outputs, Link to Alarms, On-screen Indicators. Status retrievable via RS-232 port.

Part Numbers	
Remote Keyboard	CBR-KB3 or CBR-KB3/J. Includes motorized pan, tilt, and zoom controls.
Rack Mount Kit	CBR-RK3. 1U Height. Part Number: 0110-R301
Replacement Manual	0150-0138
Replacement Power Supply	4010-0016

All specifications subject to change without notice. Kalatel believes all specifications to be correct at time of printing, but no liability is assumed for omissions or errors.

11 Text Insertion Protocol

11.1 Message Structure

The **Delimiter** byte signals the start of a new message, and has a value of 0xFF.

The **Class** and **Command** fields identify the type of message.

The **Data Length** is a 16-bit value indicating the number of bytes in the **Data** portion of the message. Data Length is sent using Intel byte ordering (Little Endian).

The **Check Sum** byte is the result of ORing all the bytes in the message.

Delimiter
Class
Command
Data Length
Data
Check Sum

11.2 Message Type

One message is currently supported to store text along with recorded video.

CMD_ADD_TEXT

Class byte is 0x14.

Command byte is 0x40.

Data Length is the number of data bytes in the message (from 2 to 205).

Camera byte indicates the camera associated with the text. The valid range is from 0 to 15.

Event byte usage is described in the following section.

String field contains text characters. The string can be from 0 to 500 characters in length.

0xFF
0x14
0x40
Data Length[0]
Data Length[1]
Camera
Event
String[0]
String[1]
:
String[n-1]
Check Sum

11.3 Event Field

The two least significant bits are currently used. All other bits should be zero.

MSB 7							LSB 0
0	0	0	0	0	0	End	Start

A – Event 0x00

If both the start and end bits are clear, the associated text will be stored with the next recorded field for that camera. That cameras record rate will not be changed.

B – Event 0x01

If only the start bit is set, the associated text will be stored with the next recorded field for that camera. This will cause the selected camera, as well as any pre-event fields to be recorded at the Event Record Rate*.

C – Event 0x02

If only the end bit is set, the associated text will be stored with the next recorded field for that camera. This will start the post-event timer** after which, the selected camera will resume recording at the normal record rate*.

D – Event 0x03

If both the start and end bits are set, the associated text will be stored with the next recorded field for that camera. The post-event timer will be started** after which the selected camera will resume recording at the normal record rate*.

*If no alarms are present.

**If enabled.

12 RS-232 Remote Protocol

The unit supports two different communication types:

- Remote Front Panel Simulation
- Remote Data and Commands

12.1 Remote Front Panel Simulations

Data Structure

Byte 1: 0xFF
Byte 2: 0x55
Byte 3: Front Panel Button Code

Description

Byte 1 and 2 are communication type ID bytes.

Byte 3 contains the code for a specific front panel button or a two button combination (alarm and number-1 buttons, for example).

The front panel buttons and its corresponding code are as follows.

No button	0
Record button	1
Play button	2
Live Multiscreen Mode button	3
Alarm button	4
Freeze button	5
Zoom button	6
Sequence button	7
Multiscreen button	8
Camera-1 button	9
Camera-2 button	10
Camera-3 button	11
Camera-4 button	12
Camera-5 button	13
Camera-6 button	14
Camera-7 button	15
Camera-8 button	16
Camera-9 button	17
Camera-10 button	18
Camera-11 button	19
Camera-12 button	20
Camera-13 button	21
Camera-14 button	22
Camera-15 button	23
Camera-16 button	24
Reserved	25-40
Menu button	41
Enter button	42
Reserved	43
Function button	44
Reserved	45-49
Monitor-B button	50
Reserved	51-63
Left Arrow button	64
Right Arrow button	65
Up Arrow button	66
Down Arrow button	67
Up & Left Arrow button (Pseudo)	68
Down & Left Arrow (Pseudo)	69
Up & Right Arrow button (Pseudo)	70
Down & Right Arrow (Pseudo)	71
Reserved	72-74
Alarm & Sequence button	75
Alarm & Camera-1 button	76
Alarm & Camera-2 button	77
Alarm & Camera-3 button	78
Alarm & Camera-4 button	79
Alarm & Camera-5 button	80
Alarm & Camera-6 button	81
Alarm & Camera-7 button	82
Alarm & Camera-8 button	83
Alarm & Camera-9 button	84
Alarm & Camera-10 button	85
Alarm & Camera-11 button	86
Alarm & Camera-12 button	87
Alarm & Camera-13 button	88
Alarm & Camera-14 button	89
Alarm & Camera-15 button	90
Alarm & Camera-16 button	91
Reserved	92-110
Search button	111
Single Frame Rewind button	112
Single Frame Advance button	113
Reverse Play button	114
Stop button	115
Play Forward button	116

12.2 Remote Data And CommandsData Structure

Byte 1: 0xFF
Byte 2: Command Type
Byte 3: Data Length n
Byte 4: Data Type
Byte 5: Data Byte 1
Byte 6: Data Byte 2
:
:
Byte X: Data Byte n

Description

Byte 1: Always 0xFF
Byte 2: Command Type
0xAA: (Set) Update system with data.
0xBB: (Get) Extract data from system.
0xCC: (Do) Reserved.
Byte 3: Contains the number of data bytes in the stream [n]. Range is from 0 to 255.
Byte 4: Indicates the data type.
Byte 5: Data bytes start at Byte 5.

Command Types Set And Get

The data types for Byte 4 are as follows.

Title 1	0
Title 2	1
Title 3	2
Title 4	3
Title 5	4
Title 6	5
Title 7	6
Title 8	7
Time and Date	8
Alarm History	9
Full Screen Sequence List	10
Reserved	11
Record List	12
Enable Camera	13
Enable Alarm	14
Multiscreen Dwell	15
Full Screen Dwell	16
Alarm Timeout	17
Alarm Input	18
Link to a Macro	19
Baud Rate (Port 1)	20
Display Time and Date	21
Display Title	22
Reserved	23
Alarm Mode	24
Time and Date Format	25
Language	26
Reserved	27-29
Macro 1	30
Macro 2	31
Macro 3	32
Macro 4	33
Macro 5	34
Macro 6	35
Macro 7	36
Macro 8	37
Macro 9	38
Macro 10	39
Macro 11	40
Macro 12	41
Macro 13	42
Macro 14	43
Macro 15	44
Macro 16	45
Title 9	46
Title 10	47
Title 11	48
Title 12	49
Title 13	50
Title 14	51
Title 15	52
Title 16	53
Reserved	54-57
Enable Activity	58
Upload Activity Settings	59
Upload Activity Grid	60
Upload Alarm and Videoloss	61
Download Activity Settings	62
Download Activity Grid 1	63
Download Activity Grid 2	64
Download Activity Grid 3	65
Download Activity Grid 4	66
Download Activity Grid 5	67
Download Activity Grid 6	68
Download Activity Grid 7	69
Download Activity Grid 8	70
Download Activity Grid 9	71
Download Activity Grid 10	72
Download Activity Grid 11	73
Download Activity Grid 12	74
Download Activity Grid 13	75
Download Activity Grid 14	76
Download Activity Grid 15	77
Download Activity Grid 16	78
Download Timed Macro	79
Reserved	80-82
Network Address	83
Reserved	84
Automatic Gain Control	85
Videoloss Action	86
Reserved	87-88
Alarm Record Mode	89
Full Screen Alarm	90
Alarm Relay Configuration	91

RS-485 Master Slave	92
Motion Detection Indicate	93
Activity or Intrusion Detection	94
Reserved	95
Upload Unit Status	96
Flash Reboot	97
Reserved	98-99
Front Panel Lock	100
Reserved	101
Set Data To Unit	254
Get Data from Unit	255

Changing Individual Parameters

- **Changing Camera Titles**

Buffer[0] = 0xFF
Buffer[1] = 0xAA
Buffer[2] = 13
Buffer[3] = Title 1 through 16
Buffer[4-16] = The Title (12 ASCII characters + null terminator).

- **Changing The Time And Date**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 12
Buffer[3] = Time and Date
Buffer[4] = Month MSB
Buffer[5] = Month LSB
Buffer[6] = Day MSB
Buffer[7] = Day LSB
Buffer[8] = Year MSB
Buffer[9] = Year LSB
Buffer[10] = Hour MSB
Buffer[11] = Hour LSB
Buffer[12] = Minute MSB
Buffer[13] = Minute LSB
Buffer[14] = Second MSB
Buffer[15] = Second LSB

- **Changing The Record List**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 30
Buffer[3] = Record List
Buffer[4-33] = Binary list of 30 numbers.
Allowable numbers are from 1 to 16.

- **Enabling or Disabling Certain Cameras**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 16
Buffer[3] = Enable Camera
Buffer[4-19] = Binary list of 16 numbers.
Digits: 0-disable, 1-enable.

- **Enabling or Disabling Certain Alarms**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 16
Buffer[3] = Enable Alarm
Buffer[4-19] = Binary list of 16 numbers.
Digits: 0-Disable, 1-Enable.

- **Changing The Multiscreen Dwell Time**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Multiscreen Dwell
Buffer[4] = Binary dwell time in seconds (from 1 to 30).

- **Changing The Full Screen Dwell Time**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Full Screen Dwell
Buffer[4] = Binary dwell time in seconds (from 1 to 30).

- **Changing The Alarm Timeout**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Alarm Timeout
Buffer[4] = Binary alarm time in seconds (from 1 to 30).

- **Changing The Alarm Input Configuration**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 16
Buffer[3] = Alarm Input
Buffer[4-19] = Binary list of 16 numbers.
Digits: 0-Normally Closed, 1-Normally Open.

- **Changing The Macro Link Values**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 16
Buffer[3] = Link to a Macro
Buffer[4-19] = Binary list of 16 numbers.
Digits: 1-16

- **Changing The Baud Rate Of The Remote Channel**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Baud Rate (Port 1)
Buffer[4] = Binary Number
Digits: 0-1200, 1-2400, 2-2400, 3-9600.

- **Enable/Disable Time and Date Display**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Display Time and Date
Buffer[4] = Binary number: 0-Disable, 1-Enable.

- **Enable/Disable Titles Display**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Display Title
Buffer[4] = Binary number: 0-Disable, 1-Enable.

- **Changing The Alarm Mode**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Alarm Mode
Buffer[4] = Binary number: 0-Latched, 1-Transparent, 2-Timed Out.

- **Changing The Time And Date Format**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 2
Buffer[3] = Time and Date Format
Buffer[4] = Time Format, Binary number: 0-12 Hour, 1-24 Hour.
Buffer[5] = Date Format, Binary number: 0-MM/DD/YY, 1-DD/MM/YY, 2-YY/MM/DD

- **Changing The Menu Language**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 2
Buffer[3] = Language
Buffer[4] = Binary number: 0-Primary Language (English), 1-Secondary Language.

- **Setting The Alarm Record**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Alarm Record Speed
Buffer[4] = Binary number: 1-13.

- **Creating A Macro Sequence**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = Number of bytes starting from buffer[4]
Buffer[3] = Macro 1 through Macro 16
Buffer[4-x] = The desired macro buttons.

The Numerical value of the buttons are as follows.

Record	1
Play	2
Live	3
Alarm	4
Freeze	5
Zoom	6
Sequence	7
Multiscreen	8
1	9
2	10
3	11
4	12
5	13
6	14
7	15
8	16
9	17
10	18
11	19
12	20
13	21
14	22
15	23
16	24
Setup	25
Select	26
Reserved	27-28
Macro Special 1, Activate Output-1	29
Macro Special 2, Reset Output-1	30
Macro Special 3, Pause 1 second.	31
Macro Special 4, Pause 5 seconds	32
Reserved	33
Monitor-B button	34
Reserved	35-47
Left Arrow button	48
Right Arrow button	49
Up Arrow button	50
Down Arrow button	51
Up & Left Arrow Pseudo button	52
Down & Left Arrow Pseudo button	53
Up & Right Arrow Pseudo button	54
Down & Right Arrow (Ps) button	55
Macro Special Activate Relay 2	56
Macro Special Reset Relay 2	57

The last byte macro buffer[x] = 58, Macro End.

The number of bytes in the macros may not exceed 32.

- **Enable Activity Detection**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 16
Buffer[3] = Enable Activity
Buffer[4-19] = Binary list of 16 numbers. Digits: 0-Disable, 1-Enable

- **Setting Activity Grid**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 32
Buffer[3] = Download Activity Grid 1-16
Buffer[4-35] = Binary digits corresponding to zones. Two bytes per row, 16 rows. Digits: 1-Active, 0-Off. Note: This message must be used with caution. Delays of 100ms must be inserted between camera grids.

- **Setting Timed Macro Information**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 6
Buffer[3] = Download Timed Macro
Buffer[4] = Event Number (1 through 20)
Buffer[5] = Day 0 through 8. 0=Disabled.
Buffer[6] = Hour, 1 through 12
Buffer[7] = Minute, 0 through 59
Buffer[8] = AM/PM. 0-AM, 1-PM.
Buffer[9] = Macro Number, 1 through 16.

- **Setting The Network Address**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Network Address
Buffer[4] = Binary Number, 0 through 255.

- **Setting The Signal Gain**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 10 (if 10 cameras) or 16
Buffer[3] = Automatic Gain Control
Buffer[4-19] = signal gain value, 1 through 10

- **Videoloss Action**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 10 (if 10 cameras) or 16
Buffer[3] = Videoloss Action
Buffer[4-19] = Action Byte
Action Byte:
2 bits external alarm action
2 bits dummy
1 bit relay 1
1 bit relay 2
1 bit buzzer
1 bit dummy

- **Alarm Record Mode**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Alarm Record Mode
Buffer[4] = 0-Interleaved, 1-Exclusive, 2-No Change.

- **Alarm Fullscreen**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Full Screen Alarm
Buffer[4] = 0-Enable, 1-Disable

- **Alarm Relay Configuration**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 2
Buffer[3] = Alarm Relay Configuration
Buffer[4] = Relay 1: 0-Close, 1-Open
Buffer[5] = Relay 2: 0-Close, 1-Open

- **RS-485 Master Slave**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = RS-485 Master Slave
Buffer[4] = 0-Slave, 1-Master

- **Motion Detection Indication**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Motion Detection Indication
Buffer[4] = 0-No Indication, 1-Indicate

- **Set Activity or Intrusion**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Activity and Intrusion Detection
Buffer[4-19] = 0-Activity, 1-Intrusion

- **Flash Reboot**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 10 (if 10 cameras) or 16
Buffer[3] = Flash Reboot

- **Keyboard Lock**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 1
Buffer[3] = Front Panel Lock
Buffer[4] = 0-Unlock, 1-Lock

- **Set Data To Unit**

Buffer[0] = 0xff
Buffer[1] = 0xAA
Buffer[2] = 17
Buffer[3] = Set Data to Unit
Buffer[4] = Block Number (1-181, 184)
Block 182, 183, and 185 are Status Blocks.
Buffer[5-20] = Data (Request RS-485 Data Block Manual for detailed information).

Accessing Data Bytes

When a message of type 0xBB is sent to the unit, it will respond by sending a 0xff start byte, followed by the requested information, followed by a 0xff stop byte.

- **Request Alarm History List**

Buffer[0] = 0xff
Buffer[1] = 0xBB
Buffer[2] = 0
Buffer[3] = History

When the Request Alarm History List message is received by the unit, it will respond by sending an ASCII string for every event in the alarm history list. The string is formatted as follows:

dd.bmm/ddbhh:mm:ss<CR><LF>
dd-alarm event number 0 through 99
b-space character
mm-month
dd-day
hh-hours
mm-minutes
ss-seconds
<CR><LF> - Carriage Return/Line Feed Pair

- **Request Activity Settings**

Buffer[0] = 0xff
Buffer[1] = 0xBB
Buffer[2] = 0
Buffer[3] = Upload Activity Settings

Six bytes are sent:

1. Sensitivity: 1 through 10
2. Relay: 0-None, 1-Relay 1, 2-Relay-2, 3-Both.
3. Link to Alarm: 1 through 16
4. False Alarm Rejection: 0-Low, 1-Med, 2-High.
5. Size Discrimination: 1 through 255.
6. Record Rate: 0-None, 1-2x, 2-4x, 3-Interleaved.

- **Request Activity Grids**

Buffer[0] = 0xff
Buffer[1] = 0xBB
Buffer[2] = 0
Buffer[3] = Upload Activity Grid

16 x 32 bytes are being sent. The first 32 bytes are zones from Camera-1, the second 32 bytes from Camera-2, etc. Two bytes per row, 16 rows.

- **Request Alarm And Videoloss Status**

Buffer[0] = 0xff
Buffer[1] = 0xBB
Buffer[2] = 0
Buffer[3] = Upload Alarm And Videoloss

4 bytes are being sent. The first 2 bytes represent the alarms in the system (MSN,LSB). The next 2 bytes represent the video loss status (MSN,LSB).

- **Get Data Block**

Buffer[0] = 0xff
Buffer[1] = 0xBB
Buffer[2] = 0
Buffer[3] = Get Data From Unit.
Buffer[4] = Block Number 1 through 185 or 255 for all blocks.

16 (1 block of data) or (16x185) bytes are being sent. Request RS-485 Data Block Manual for detailed information.

13 Macro Tables

Photo copy this page and use it to keep a record of the programmed macro functions.

13.1 Macro Functions Table

Macro Number	Description
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
Function + Sequence	Daylight Savings Time: Sets clock ahead one hour in April, and back one hour in October.

13.2 Scheduled Macro Table

Day of the Week Setup: Monday = _____ (See the Time/Date menu)			
Event	**Day**	**Time**	**Macro to Run**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

14 Warranty and Service

14.1 Factory Service

Warning: Do not open the top cover or attempt to service the unit, as this may expose you to dangerous voltages and other hazards. Programmer maintenance of this unit is limited to external cleaning and inspection. Refer all servicing to qualified personnel.

If the unit requires factory service, contact the dealer who supplied the unit to you for the correct procedures on returning the unit to the factory or the nearest factory service center.

If the dealer is not available, contact the manufacturer of the unit as detailed below and request a Return Material Authorization number (RMA). The units serial number must be provided before a RMA number can be issued. Units returned to the factory for service must have freight and insurance prepaid, and must show the RMA number clearly on all shipping documents. The failure symptoms must be clearly described by the operator and enclosed with the unit together with a copy of the original suppliers invoice. Failure to comply with these instructions will delay service of the unit, and may result in the unit not being accepted by the Repair Center.

Factory Address

Kalatel
Attention: Repair Center
3197-C Airport Loop Drive
Costa Mesa, Ca, 92626
United States of America
Telephone: 800-343-3358 (7:00 AM to 4:30 PM, Pacific Time)
In Oregon: 541-754-9133
Fax: 541-754-7162 (24 hours a day)

For warranty information, see the following page.

14.2 Warranty

Kalatel warrants all of its equipment for three years from the date of purchase. This warranty specifically covers any defects in materials and workmanship. Any equipment failures due to improper installation, modification, abuse, or acts of nature will not be covered by this warranty. The repair department will evaluate all equipment returned for repair to determine warranty coverage. The Tech Support Manager will resolve any questions that may arise during evaluation to make a final determination.

The three year warranty does not apply to the MobileView™ and the monitor CRT, which carry a 12 month warranty from the date of purchase.

For all warranty repairs: Kalatel will cover all costs including parts, labor, and shipping. Repaired equipment will be returned via the same method of shipment in which it was received. If a customer requests a faster return shipment, the difference will be charged.

For all non-warranty repairs: the customer will be billed for parts, labor and shipping. Labor will be billed in ½ hour increments. If a customer requests a faster return shipment, the difference will be charged to the customer.

Estimates: Customers requesting an estimate prior to repair will be notified by phone. If they cannot be reached, they will be notified by fax. If we are unable to reach the contact person for repair authorization after one phone attempt and two fax attempts, the equipment will be returned without being repaired. We will hold equipment no longer than two weeks.

Advance Replacement Policy

When an Advance Replacement is required, we will send the customer replacement equipment from our stock and receive the returned product in exchange. The received equipment will be evaluated and the repair department will determine whether or not it is a warranty replacement. If it is non-warranty, see our Repair Policy above for details. The following guidelines will be used for all advanced replacements:

1) Up to 90 days from purchase, Kalatel will replace with new equipment.

2) Over 90 days, Kalatel will replace with remanufactured equipment.

If you have any questions on this policy, contact Kalatel Technical Support at 1-800-469-1676.